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(54) Title: ALTERNATIVE READING FRAME ANTIGENS FROM VIRUSES

(57) Abstract: The invention discloses polypeptides encoded by an alternative reading frame of a pathogenic virus, which polypeptides - start with a methionine amino acid residue, - comprise an antigenic determinant and - comprise more than 7 amino acid residues and fragments of said polypeptides comprising more than 7 amino acids.

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## ALTERNATIVE READING FRAME ANTIGENS FROM VIRUSES

The invention relates to peptides derived from pathogenic viruses.

For several viral infections it has become more and more clear that an early effective and strong CTL response to most encoded viral proteins is critical to overcome or clear a viral infection from the host.

Selection for mutations within CTL epitopes of HIV demonstrates that CTL exert pressure on virus replication *in vivo*, and studies in macaques have provided compelling *in vivo* data for the role of CD8+ T cells in controlling viremia in both acute and chronic simian immunodeficiency virus (SIV) infection. HIV-infected individuals who are treated during acute infection show enhancement of both CTL and T helper cell responses against HIV associated with subsequent viral control after treatment interruption.

Therefore the identification of precise epitopes from most (if not all) viral proteins is a major goal in view of understanding the hosts immune response and most important for the design of new and effective vaccines against those pathogens.

As up to now, most research for the identification of those epitopes has focused mainly on those proteins of the viruses which are encoded in the actually transcribed open reading frames (ORF's), i.e. the structural proteins and the proteins which have a certain function for the virus, e.g. for its regulation, replication or reproduction.

Although some research has been performed in investigating in potential alternative reading frames of pathogens, the topic of such alternative reading frames has up to now only been regarded as relevant for tumor antigens, but not for viral pathogens, despite some reports about overlapping reading frames in HCV (see Walewski et al. (RNA 7 (2001) 710-721) and WO99/63941) and other viruses or antigens (Bullock et al. (J.Exp.Med.186(7)(1997), 1051-1058), Malarkannan et al. (Immunity 10(1999) 681-690) and

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Shastri et al. (J.Biol.Chem.270(3)(1995) 1088-1091). All these reported viral polypeptides have starting codons other than AUG or ATG leading to peptides starting with e.g. Ala, Leu, Pro or Gly. Moreover these viral peptides according to the prior art were no T cell epitopes, but - at best - were able to elicit an antibody response.

It is an object of the present invention to provide further means for combating viral infections. It is a further object to provide means for replacing or improving existing or proposed vaccines against viral pathogens, especially human pathogens. A specific aim is to provide effective T cell epitopes against viral pathogens.

Therefore, the present invention provides a polypeptide encoded by an alternative reading frame of a pathogenic virus, characterized in that said polypeptide

- starts with a methionine amino acid residue,
- comprises an antigenic determinant and
- comprises more than 7 amino acid residues

and fragments of said polypeptide comprising more than 7 amino acids.

Surprisingly, such epitopes (antigenic determinants) proved to be highly relevant in infections with pathogenic viruses. Indeed, T cell responses against such alternatively encoded epitopes are detectable in patients suffering such infections. It seems that upon infection of a virus into a host cell, not only those ORFs of the viral genome, which give rise to the viral proteins, are transcribed, but also some of those proteins or fragments which are encoded by other frames of the genome.

Such a polypeptide according to the present invention may be defined as an antigenic sequence within an ORF of the genome but outside the primarily (main) transcribed ORF of a given pathogenic virus.

Alternative reading frame as used in the context of the present invention is defined as a reading frame which is different from the open reading frames (= main frames) which encode utilized

codons of an organism or virus for the expression of e.g. structural proteins or non structural proteins.

Typically but not exclusively a main frame starts with the first coding start codon, e.g. AUG or GUG of a nucleic acid eg. of a messenger RNA or an RNA from a positive/negative stranded RNA virus. Alternative frames described in this invention do not use these start codons or any other codon used by the main frames, respectively.

The present invention considers 5 such alternative reading frames which by a second name are also called non-coding open reading frames (ncORFs), to be distinctive from the main frames as described above. One such alternative reading frame is the +1 frame, which uses codons that start with the next nucleotide 3'prime of the 5'prime nucleotide of a main frame codon. A second such frame is the +2 frame which uses codons of which the 5'prime nucleotide is identical with a 3'prime nucleotide of a codon of the main coding frame. Alternative reading frames 4, 5 and six are encoded by a nucleic acid which is complementary to a nucleic acid, encoding alternative reading frames 1 and 2 respectively. The 5'prime nucleotide of a frame 4 codon is complementary to a middle nucleotide of a codon of a +1 frame. The 5'prime nucleotide of a frame 5 codon is complementary to the 5'prime nucleotide of a +1 frame codon and the 5'prime nucleotide of a frame 6 codon is complementary to a 3'prime nucleotide of a +2 frame codon.

Furthermore, alternative reading frames might be located in regions of the genome which are not involved in main frame translations, eg. so called non translated 5'prime or 3'prime regions.

Although these "ncOrfs" ("non coding ORFs") do not display a (yet) known function for the pathogen, they encode for antigenic determinants (B- or T- cell epitopes)

In contrast to all enabling reports about alternatively encoded ORFs in HCV (see Walewski et al., WO99/63941) and other viruses or antigens (Bullock et al., Malarkannan et al., Shastri et al.)



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the polypeptides according to the present invention have all an AUG or ATG (encoding Methionin) as start codon. Moreover the peptides provided with the present invention contain T cell epitopes as antigenic determinants and are not intended to exclusively elicit an antibody response.

The principle provided with the present invention seems to be a general one in viral infections. It is therefore not restricted to certain viruses or certain groups of viruses. Regarding this, preferred polypeptide or fragments according to the present invention are those from major and prominent (human) pathogenic viruses or pathogenic virus for which currently no proper treatment or active immunisation protocol exists, such as Hepatitis A virus (HAV), Hepatitis B virus (HBV), Hepatitis C virus (HCV), Hepatitis D virus (HDV), Hepatitis E virus (HEV), Hepatitis F virus (HFV) Hepatitis G virus (HGV) Human Immunodeficiency viruses (e.g HIV-1 and HIV-2), Influenza virus, Foot and Mouth Disease virus (FMDV), Ebola virus, HTLV I, HTLV II, SIV, Parvovirus, Papilloma virus, Rotavirus, Adenovirus, Cytomegalovirus, Feline Immunodeficiency virus (FIV), Epstein-Barr virus (EBV), Herpes simplex virus (HSV), Herpes zoster virus (HZV), Measles virus and oncogenic viruses.

With the present invention, a completely new generation of immunogenic epitopes are provided which according to a preferred embodiment are characterized in that the polypeptides and fragments according to the present invention comprise at least one cytotoxic T lymphocyte (CTL-) epitope.

Preferably the polypeptide or fragments according to the present invention comprise a cytotoxic T lymphocyte (CTL-) epitope for a HLA allele selected from the group consisting of A0201, A1, A24, A3, A31, B3501, B4403, B7, B8, especially A0201, or mixtures thereof.

According to a preferred embodiment, the polypeptide or fragments according to the present invention comprise at least one T helper cell epitope.

Preferably, the polypeptide or fragments according to the

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present invention comprise a T helper cell epitope for a HLA allele selected from the group consisting of DP, DQ, DR or mixtures thereof.

Preferred epitopes according to the present invention are selected from the group listed in table 2a)-n) (Seq.ID No.1-822) or a fragment of said polypeptide comprising more than 7 amino acids and/or epitopes comprising or consisting of a fragment selected from the group listed in table 4a)-n), preferable fragments with a score of 50 or more, more preferred with a score of more than 200, especially fragments with a score of more than 500 (according to the scores given in the table which were determined according to the algorithm reported by Parker et al. (J.Immunol.152 (1994) 163)).

Further preferred epitopes according to the present invention are the polypeptides selected from the group listed in table 6 and comprising more than 7 amino acid residues (Seq.ID No.823-874) or a fragment of said polypeptide comprising more than 7 amino acid residues.

The polypeptides or fragments according to the present invention may be conjugated to a carrier, especially to an immunomodulating substance. For certain applications, such conjugations result in an improved action of these peptides. It may also be preferred to couple selected hydrophobic (F, I, L, A, Y, W, C) or acidic amino (D or E) acid residues N- and/or C-terminally to the peptides as described in WO 01/78767.

Preferred polypeptides or fragments therefore comprise a tail consisting of two to seven amino acids, said amino acids being selected from F, I, L, A, Y, W or C, at at least one of its N- or C-terminus; or a tail consisting of two to seven amino acids, said amino acids being selected from E or D, at at least one of its N- or C-terminus.

In specifically preferred conjugates, the polypeptides or fragments according to the present invention are conjugated to an immunomodulating substance selected from the group comprising polycationic substances, especially polycationic polypeptides,

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and immunomodulating nucleic acids, especially deoxyinosine- and/or deoxyuridine containing oligodeoxynucleotides.

Preferably the polycationic substance is a polymer, preferably a polycationic peptide, especially polyarginine, polylysine or an antimicrobial peptide.

The polycationic compound(s) to be used according to the present invention may be any polycationic compound which shows the characteristic effect according to the WO 97/30721. Preferred polycationic compounds are selected from basic polypeptides, organic polycations, basic polyaminoacids or mixtures thereof. These polyaminoacids should have a chain length of at least 4 amino acid residues. Especially preferred are substances containing peptidic bonds, like polylysine, polyarginine and polypeptides containing more than 20%, especially more than 50% of basic amino acids in a range of more than 8, especially more than 20, amino acid residues or mixtures thereof. Other preferred polycations and their pharmaceutical compositions are described in WO 97/30721 (e.g. polyethyleneimine) and WO 99/38528. Preferably these polypeptides contain between 20 and 500 amino acid residues, especially between 30 and 200 residues.

These polycationic compounds may be produced chemically or recombinantly or may be derived from natural sources.

Cationic (poly)peptides may also be polycationic anti-bacterial microbial peptides. These (poly)peptides may be of prokaryotic or animal or plant origin or may be produced chemically or recombinantly. Peptides may also belong to the class of defensins. Such host defense peptides or defensins are also a preferred form of the polycationic polymer according to the present invention. Generally, a compound allowing as an end product activation (or down-regulation) of the adaptive immune system, preferably mediated by APCs (including dendritic cells) is used as polycationic polymer.

Especially preferred for use as polycationic substance in the present invention are cathelicidin derived antimicrobial peptides or derivatives thereof (WO 02/13857, incorporated herein

by reference), especially antimicrobial peptides derived from mammal cathelicidin, preferably from human, bovine or mouse, or neuroactive compounds, such as (human) growth hormone (as described e.g. in WO01/24822).

Polycationic compounds derived from natural sources include HIV-REV or HIV-TAT (derived cationic peptides, antennapedia peptides, chitosan or other derivatives of chitin) or other peptides derived from these peptides or proteins by biochemical or recombinant production. Other preferred polycationic compounds are cathelin or related or derived substances from cathelin, especially mouse, bovine or especially human cathelins and/or cathelicidins. Related or derived cathelin substances contain the whole or parts of the cathelin sequence with at least 15-20 amino acid residues. Derivations may include the substitution or modification of the natural amino acids by amino acids which are not among the 20 standard amino acids. Moreover, further cationic residues may be introduced into such cathelin molecules. These cathelin molecules are preferred to be combined with the antigen/vaccine composition according to the present invention. However, these cathelin molecules surprisingly have turned out to be also effective as an adjuvant for a antigen without the addition of further adjuvants. It is therefore possible to use such cathelin molecules as efficient adjuvants in vaccine formulations with or without further immunactivating substances.

Another preferred polycationic substance to be used according to the present invention is a synthetic peptide containing at least 2 KLK-motifs separated by a linker of 3 to 7 hydrophobic amino acids, especially L (WO 02/32451, incorporated herein by reference).

The immunomodulating nucleic acids to be used according to the present invention can be of synthetic, prokaryotic and eukaryotic origin. In the case of eukaryotic origin, DNA should be derived from, based on the phylogenetic tree, less developed species (e.g. insects, but also others). In a preferred embodiment of the invention the immunogenic oligodeoxynucleotide (ODN) is a synthetically produced DNA-molecule or mixtures of such molecules. Derivates or modifications of ODNs such as thiophos-

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phate substituted analogues (thiophosphate residues substitute for phosphate) as for example described in US patents US 5,723,335 and US 5,663,153, and other derivatives and modifications, which preferably stabilize the immunostimulatory composition(s) but do not change their immunological properties, are also included. A preferred sequence motif is a six base DNA motif containing an (unmethylated) CpG dinucleotide flanked by two 5' purines and two 3' pyrimidines (5'-Pur-Pur-C-G-Pyr-Pyr-3'). The CpG motifs contained in the ODNs according to the present invention are more common in microbial than higher vertebrate DNA and display differences in the pattern of methylation. Surprisingly, sequences stimulating mouse APCs are not very efficient for human cells. Preferred palindromic or non-palindromic ODNs to be used according to the present invention are disclosed e.g. in Austrian Patent applications A 1973/2000, A 805/2001, EP 0 468 520 A2, WO 96/02555, WO 98/16247, WO 98/18810, WO 98/37919, WO 98/40100, WO 98/52581, WO 98/52962, WO 99/51259 and WO 99/56755 all incorporated herein by reference. Apart from stimulating the immune system certain ODNs are neutralizing some immune responses. These sequences are also included in the current invention, for example for applications for the treatment of autoimmune diseases. ODNs/DNAs may be produced chemically or recombinantly or may be derived from natural sources. Preferred natural sources are insects.

Alternatively, also nucleic acids based on hypoxanthine and cytosine (as e.g. described in the WO 01/93905) or deoxynucleic acids containing deoxyinosine and/or deoxyuridine residues (described in the PCT/EP02/05448, incorporated herein by reference) may preferably be used as immunostimulatory nucleic acids for the present invention.

Of course, also mixtures of different immunogenic nucleic acids may be used according to the present invention.

The above mentioned substances may be used as conjugates with the present peptides or fragments or as mixtures. The mixtures may either be provided in a form already mixed or as a kit of single components intended to be mixed before application.

The preferred polypeptides or fragments according to the present invention comprise a T cell epitope.

Surprisingly, with the present invention not only polypeptides or fragments having a shifted reading frame (i.e. reading frame 2 and 3) are provided as clinically relevant peptides, but also such peptides and fragments being encoded by an alternative reading frame which reads on the complementary strand as the functional reading frame of said pathogenic virus, i.e. generally referred to as reading frame 4 to 6 in the present specification. This means that also such reading frames proved to be of importance which are located at the opposite end of the known (functional or structural) gene or e.g. its regulating elements.

Therefore, one further aspect of the present invention consists in all antigens being encoded by alternative reading frames of pathological viruses which read on the complementary strand as the functional reading frame of said pathogenic virus, i.e. generally referred to as reading frame 4 to 6.

Preferred polypeptides or fragments according to the present invention comprise at least one peptide selected from the group of peptides listed in table 4a, 4c, 4e, 4g, 4i, 4k and 4m having a score of 50 or more, more preferred with a score of more than 200, especially with a score of more than 500.

According to a preferred aspect of the present invention the present polypeptides or fragments are used as a therapeutic agent. It is known that especially T cell epitopes may be used as vaccines for prophylactic uses. However, with the peptides and fragments according to the present invention, especially with the HCV derived peptides i.a. in reading frames 2 and 3, also a therapeutic tool for combatting (chronic) infections with such pathogenic viruses, such as HCV, is provided.

The peptides and fragments according to the present invention also include modified epitopes wherein preferably one or two of the amino acids of a given epitope are modified or replaced according to the rules disclosed in e.g. Tourdot et

al. (Eur. J. Immunol. 30 (2000), 3411-3421), as well as the nucleic acid sequences encoding such modified epitopes.

According to a preferred aspect, the present invention also relates to a pharmaceutical composition comprising one or more polypeptides or fragments according to the present invention. This pharmaceutical composition may be used for both, prophylactic as well as therapeutic purposes.

As stated above, the present pharmaceutical compositions preferably further comprise an immunomodulating substance, preferably selected from the group comprising polycationic substances, especially polycationic polypeptides, and immunomodulating nucleic acids, especially deoxyinosine- and/or deoxyuridine containing oligodeoxynucleotides.

In the present pharmaceutical compositions, the peptides or fragments according to the present invention may be used alone or in combination with "normal" polypeptides (epitopes, antigenic determinants) of a given pathogenic virus (or combinations of antigens of different pathogens). A preferred embodiment therefore further comprises structural or functional polypeptides of a pathogenic virus or fragments thereof, especially structural or functional polypeptides or fragments thereof comprising an antigenic determinant.

-- The administration of the pharmaceutical compositions according to the present invention may be performed according to the administration of other known polypeptide vaccines. Preferably, the composition contains per administerable dose 1 ng to 1 g, preferably 100 ng to 10 mg, especially 10 µg to 1 mg, of one or more polypeptides or fragments according to the present invention.

Preferably, the pharmaceutical composition is formulated as a vaccine.

It is preferred that the pharmaceutical composition according to the present invention comprises further active ingredients, especially immunopotentiating cytokines, anti-inflammatory sub-

stances, antimicrobial substances or combinations thereof.

It is further preferred that the present pharmaceutical composition further comprises a polycationic polymer selected from the group consisting of a polycationic peptide, especially polyarginine, polylysine or an antimicrobial peptide, especially a cathelicidin-derived antimicrobial peptide, or a growth hormone, especially a human growth hormone.

Additionally, auxiliary substances, especially a pharmaceutically acceptable carrier, buffer substances, stabilizers or combinations thereof are provided with the pharmaceutical composition.

According to another aspect, the present invention also relates to the use of a polypeptide or fragments according to the present invention for the manufacture of a medicament for treating or preventing an infection with said pathogenic virus.

It was not foreseeable within the prior art that upon infection of a virus into a host cell, not only those ORF's of the viral genome, which give rise to the viral proteins, are transcribed, but also some of those proteins or fragments which are encoded by other frames of the genome. This was even more surprising for reading frames 4 to 6.

The invention will hereinafter be described in a more detailed way in the following examples and the figures, yet without being restricted thereto.

Fig.1 shows the Elispot assay from the experiment with HLA-A\*0201 tg mice + HCV-H77 ncORF 11, 13, 27-derived peptides;

Fig.2 shows the Elispot assay from the experiment with HLA-A\*0201 tg mice + HCV-1b ncORF 36-derived peptides;

Fig.3 shows an Elispot assay for an HLA-A\*0201 HCV positive patient

Fig.4 shows the immunogenicity of peptides from HCV 1b reading



frames 4 to 6 in transgenic mice

Fig.5 shows that vaccination with ncORF derived peptides from influenza A virus in combination with KLK/o-d(IC)<sub>13</sub> induces potent IFN- $\gamma$  producing T cells and protection against viral challenge.

Examples :

**Example 1: HCV**

HCV was used as a model virus for the present invention. The principles described in the present example, however, may be applied to any virus.

The entire genomes of 7 clinically relevant strains (1a, 1b, 2a, 2b, 3a, 3b and H77) of HCV were analysed in order to determine all ORF's being longer than 7 amino acid residues and starting with an AUG (Met) codon in all reading frames other than the reading frame for the HCV polyprotein. The HCV genome sequences were taken from the Genbank data base (Accession Nos.: AF387806 (1a), D11355 (1b), AF238485 (2a), AB030907 (2b), AF046866 (3a), D49374 (D26556) (3b), AF011751 (H77)). Altogether, 822 novel ORFs were identified in this study (see summary in table 1).

Strain	Frames	No. of frames*	Seq.ID Nos.	Full sequence listed in table 2
1a	1-3	42	1 - 42	Table 2a
	4-6	68	43 - 110	Table 2b
1b	1-3	56	111 - 166	Table 2c
	4-6	75	167 - 241	Table 2d
2a	1-3	47	242 - 288	Table 2e
	4-6	71	289 - 359	Table 2f
2b	1-3	45	360 - 404	Table 2g
	4-6	75	405 - 479	Table 2h
3a	1-3	38	480 - 517	Table 2i
	4-6	70	518 - 587	Table 2j
3b	1-3	53	588 - 640	Table 2k
	4-6	72	641 - 712	Table 2l
H77	1-3	40	713 - 752	Table 2m
	4-6	70	753 - 822	Table 2n

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**Table 1: Number of ORF's in six different HCV strains (\* more than 7 AA long)**

The following table 2 contains the full sequences of the polypeptides.

Other HCV subtypes which may also be preferably adapted for the present example include subtypes 1c, 2c, 2d, 3c-f, 4a-j, 5a or 6a.

Table 2a (Seq.ID Nos. 1 - 42)

HCV 1a ncOrf's 1- 3

Genbank Accession No.: AF387806

No.	Sequence	AA
1	MGATLHHESLPCEELLSSRRKRLAMALV	28
	MAMRAAGGRDGSCLPVALGLAGAPQTPGVGRAIWVRSSIPLRAASPTSWGTYRSSAPLLEALPGP-	
2	WRMASGFWKTA	76
3	MQQGTFLVALSLSSFWPCSLA	21
4	MIALTRVLCTRRPMPSCTLRGASLAFARATPRGVGWR	37
5	MANSRRSEFDVTSICLSGAPPSVRPSTWGTGAGLSFLSANCLPSLPGATGRRKVAIALSIPAI	63
6	MIASPTAGWQGFSTTSSTLQAVLRG	26
	MPTEAAPTSAPTAGTTPQNLAVALCPRRVCVVRYIASLPAPWWWERPTGRARPPTAGVKMIRTSSSLTIP-	
7	GHRWAIGSVVFG	81
8	MQHPWPGRFTVLYPSSCSSALHGI	23
9	MFITISLLFGTGRTTACEIWPWL	23
10	MEWSPRVGGCWRPSRRTPSRQGAS	24
11	MGCAGLSTTGPERGPSRHRPRVLSSRCIPM	29
12	MSFPCAGGVIAGAACCRPGPFPT	23
13	MLPQAAAKAPRSRLHMQLRRAIRC	23
14	MGSILTSGPG	10
15	MPHPSWASALSLTKQRLRGRDWLCSPPPPLRAPSLCPIPTSRRLCPPPERSLFTARLSPSK	62
16	MPWPTTAVLTCPPSRPAAMLSSWQPMPS	28
17	MLSPALNVGAGLAGGSQASTDLWHRGSAPPACSTRPSSVSAMTQAVLGMSSRPRLQLGYERT	63
18	MPTFYPRQSRVGRTFLTW	18
19	MGQHPCYTDWALFRMKSP	18
20	MRWKSALSTYRTSSKG	16
21	MARAWRELLWHSRS	14
22	MFPPRTTCRRAMQLPASLPYSAASL	25
23	MPTPRAPVPPFLRRTTTRSYGGCLQRNTWR	30
24	MTPLMLSS	8

MAARFHLQSPILLCLRLGRSGRWSSLNQPYLLPWSSPPEALAAPQLPALRATIRQHPLSPPLLAAPPT-	
25 PTLSPIPPCPPWRGSLGIRILATGHGQRSVVRPTRRMSCAAQCLTLGQAHSSPRAPRKNRNCPSMH	134
26 MGQKTSVAMPERP	13
27 MIPAAALTPQSLRATSVRRRQSTNVVTSTPKPAWPSSSPRGFMLGALLPIQGGRTAAIAGAARAAY	66
28 MASAHFHSTVTQLQVKSIGWPHASENLGYRPEC LGDTGPGASALGFWPEEAGLPYVASTSSTGQ	63
29 MPGPAGSGFAYSCLLQG	17
30 MNHSPVRNYCLHAESV	16
31 MPGDLGVPPQDC	12
32 MAPVSPWLSA	10
MGYDDELVPYDGVGNLSAAPDPTSHLGHDRWCSLGSPGGHSVFLHGGELGEGPGSAAAI CRRRRGN-	
33 PRHRGKCRPHCVWIC	81
34 MHVGRPGGRHEHLGARWRRPGCFGRVLPVNRLRGHSGQGRLVREAGNHT	49
35 MLRFLAKGHLGLDMRGVERL	20
36 MEGVCRGIRGDKAGGGLPLRDGYDY	25
37 MPVPGPIARIFHRIGRGAPT	20
38 MEAGDGRQHHQG	12
39 MLLQRVSRPRRRWKEGLLPHP	21
40 MPQKTWGTALASLETGPGERPR	22
MWQVPLQLGSKNKAQTHSNSGRWPAGLVRLVHGWLQRGRHLSQRVSCPAPLDLVLP TPAC-	
41 CRGRHLPPPQPVKVGVNTPAS	81
42 MSVVQPPGPPLPGEP	15
43 HCV polyprotein	15

Table 2b (Seq.ID Nos. 43 - 110)

HCV 1a ncOrf's 4- 6

No.	Sequence	AA
1	MIPPPAARACRGAQTYVGAPRPIL	24
2	MEWYTPSLSTGAVASGAGLQ	20
3	MPQELPPRPRHTLQGCL	17
4	MKQWRGYQAALTSPPSIVSH	20
5	MRPALRRVRTSSLNDRR	18
6	MWHPWSGTRHKLLCHKRPPSTRRRQGTCCRWS	33
7	MQPGPWCFRCRLWEHGGEPPGSSGALLVERSY	33
8	MSGYLAERAS PQGLDLHWYTS	22
	MVTELAPSTRREQHRHTTRPPPCPARTPAGATPTGAGGEATSRRRCRPLRAPTYPSDTMQSR-	
9	RTRGRIQDRASRPGLH	79
10	MWRPDACGSNQWSAGCCCPPLR	23
11	MPCGDPLYGRDR	12
12	MALPGGGVLEAARHSY	16
	MRLTDLSQLAVTRAKMEPPLKKEGKERKKEGKKKKKKKEKKKKKKKKKKKKKKKKKKKT-	
13	GNGLRGRSVYPNLHRLGRR	82
14	MPTPAASRSRQNIQRGR A	20
15	MAALPPLARSLARTLRARCLQARKGGTPSFLRHAATLLISPGE	43
16	MIGGRSSGSME	11
17	MIMLPSQELTGVCLAVSHAALARGVVGSRVR	31
18	MSSKSYSGCGSPGGAEYLVIA SVKALRLAASSWTPALSQITTKSSPHTSMVQSWSPAARQAARALM	67
19	MATRAWGSR SQHW	13
20	MSLSVTVESKQRVSYENPIGVFLDFHACTRNSTRCPGEYWN	42
21	MRRAGLRPPFSG	12
22	MMVVSIGVTLSRRSFHTELMWVTAFLAWQRTSFAP	36
23	MGSFCSAAHGVT SAPVQE	20
24	MPEVEELPKLLVASSAKAVDRVDSVRTTVRFFRGGGTGGDFGGSGQPWTTGGS	54
	MLPPIISCLHRRLASMSASGESWLAVQVALRDGADSWLAEEELATEGGDPLANLRPAASAVIWEGSVSMD-	
	VNTATSGSGSQGNCDPTGYSWSPTLNDTSSRSKGLQGGANLCRRTPSNSVKNSGDGTWHGLRLSVVI-	
25	PVT	140
	MGKVPLHMFLOVLGPTILIVPFLTCPVISAPQWQVRVCMMPSPRQTPLYPRWQDTKGIPGSCGMSLAF-	
26	SQVLKSLNTSHIQSQMSLSQEPHGVVHSELIHWCSRLRSWVTVRLLSMAVTRAAASLSGT	128
	MAGSRLTRSSVEGTSPLMILNATRAPATPAPYPARMSMRTFSPSTLPMAAPAKPAPTKAVAAP-	
	GAASWAATHPPNMLKRRVWL VVSGLVTA AVKAIN EAMAGLPGSVDKPAKYCIPLMKFHICFAQKVSSFC-	
27	QLVWTAGAITSA	144
28	MIAGFPDKTTLPTMTTQPVD RQYAAKAARTPPTSTQVLVTTSRSADMHVMMYLVTGCVRVISF	63

29	MYARSLTVVSAGVSSYQAQPAS	22
30	MPEGRSPGATNL	12
31	MPGFPLPVLPRR	12
32	MVKVGSRLKSTVWVTHVLQSITEKSPV	28
33	MRASVATT'TTSPLVGMTDTSRPR	23
34	MPNATSFAASSSHFFFE	17
35	MRCLPPLITSRGIALP	16
36	MLGWGTVTEPGGVAVAST'TSLAPAVSAWSRTVPMKMDVASVEWHSSQIIMS	52
37	MGLPVVIVLTPVLMGSIIP	19
38	MVVS RFSTGIKSTALATPRVHTAALNMPTACPAGHNSGPPEEPFK	45
39	MGRGDSRLPLLSPRRRTGMTSACLVR	27
40	MTGPLGDAMVLVPAPW	16
	MHVARKVWAAVDTIWTSPTWFLSRPVRLVIMHPRRPLVCWAYAVMGASNLQPLETIPSAGPSS-	
41	ISRPLRAETGKPLMMSPHAAVSAPHVMSLVSIWEKTTGSTATARSRKPLCAQSRRGVRWL	124
42	MSNTRVGCTAHMSKMTASRPRTLRGGIHTCSCASTLVRKY	41
	MSSIIHKQEQTRASASRRNRRTTYSHLMAQDAMLDPYKYCTSTMFWWRWMPVDKAGRVVKEHGRT-	
43	CHCVVVSSNGLSSDLSLSSRSQRSRPRVQLQAASSLCSTPPTYILILNIV	117
44	MTQGGAPHTLVNPVEFIQVQPNQLPSGGLVLLRTKTSVSFSPQL	44
45	MEKYAMPARTPQ	12
46	MSKMACGIRSS	11
47	MASAASYTILELGQSLVTW	19
48	MYPMRSAPHVRVSMTLPKLRDLRRGSVGPQLGREPRGDRSHPAHPQPSLP	51
49	MVHGLRDLPGHSQAPYQAVPQGLSRPNT'TRLAVLRGHAQISRH	43
50	MICREASISTLCSHAAHGPFRTASRD	25
	MRHAVINVS PAVASREPAQVQQLASGRYWSEFELCSYCPVEEVLATYGPASSGQKPSADAPG-	
51	PVSPSSQGRYPKFSEACGHPIDFTWRVTVE	93
52	MESLNDWR	8
53	MGHQYHPRPQCGGKH DYVA	19
54	MATDVFCPITKLGF	15
55	MAVQNLQSVKCDFLLPLASTA	21
56	MDHRWFVVG LFPRLH	15
57	MVSGASCLERWSG	13
58	MGGISEHGRQHGHVRFGLAR	20
59	MSSDLSSTVAASVHDAVPSDPLIPALAGHKGDPRQLWHELSE	43
60	MVPPGGEQYQPVHPLHCLPLARANVPAQYCCTDHADYEGSGREDGGQ	46
61	MLRPEGLEFLPVGLDSRGDNLCLTGRGLQEAEGLLLELLGEHHPLLDVR	49
62	MEGGLEANQTLPHLVPRWGRGLSPSAHGGLVRYQVRKVLPTLLCLG	46
63	MSEACEDALPKFKVVLAHGKPRGVHVR	28

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MTEDEMSPPLDYFEGDSLAVKRDLSGGGQSNLLDVGMGHSDGARRGGGGEHNQSRPRSLCLVK-  
DSADAQDGCGRGVALVTNYYVISAPRAPAVGKELAVGGVRDGAASGNC SHPGPDV-  
64 RIDPMSLGHVSTKAQCCSNRGVEY 143  
65 MEVSHLEALGHYWRGVIREHRGPHGCL 28  
66 MVINIGASKRP 11  
67 MASDHLPR 8  
68 MPKPIRVVDQAPGCDPGTGAAPRVCGRMLAEAISGAVQGVVARPSDDTRRRS AHFGESS 60

Table 2c (Seq.ID Nos. 111 - 166)

HCV 1b ncOrf's 1- 3

Genbank Accession No.: AF

No.	Sequence	AA
1	MATRVWGGQDGSCHPVALGLVGAPQTPGVGRVIWVRSSIPLHAASPTSWGTFRLSAPP	58
2	MASGFWRTA	9
3	MQQGICPVALSLSSS	15
4	MSRTTAPTQVLCMRQRT	17
5	MRRYKIAIAQSIPATYQVTAWLGI	24
	MTPSKLGSLLRCSHTGTSTRPDVQSAWPAAAPSTSSLRGGVPSLTLCLTSRTRGLIAGTMHPN-	
6	RAVLYPRRRCAQCIASPRVLLWWGRPTVPESPRIAGGRMRQTCCYSTTRGRRKATGSAVHG	125
7	MFCCSSFWRTRASVPACG	19
8	MRRLWPERMAFSPSSCSSAPPGTSKAGWSLGRHMLSMAYGRCS CSCWLYHHELMPTERWLHRAEARFL	69
9	MFGEAAMPSSSLHARSIQS	19
10	MWTRTSSAGRRPPGRVP	17
11	MLTSFRCAGGATVGGACSPPLSPT	25
12	MQPKGTRCSSSIRPLPLP	18
13	MASFLPMVVALGALMTS	17
	MSAIQLTRLQSWASAQSWTKRRRLERGLSCSPPLRLRDRSPCHTQTSRRWPCLILERSPS-	
14	MAKPSPLKPSGGEGISFSVIPRRSATSSPQSCQASESTLWRITGGSMCPSYQLSETSLWQQTL	124
15	MTRAVLGTSSPPPRPRLGCGPT	22
16	MHTSCPRPSRQETTSPTW	18
17	MRSPSPTP	8
18	MKWKSA PRTSLTSLRECSSPSSSRKRSYGCKQPPNKRLLLLPWSPSGEPLRHSGRSTCGISSAGYST	69
19	MEQEWPARSWPLRS	14
20	MCLRATPQRVLLRSPALPSLSC	23
21	MRTAPHRVPARG	12
22	MFGTGYARC	9
23	MEHSPSTHTPRAPAHPLQRQTILGRCGGWPLRSTWRSRGWGISTT	45
24	MSLRTLTSSRPTSCGRRWAGTSPAWSRRTRW	32
25	MRGKYPFRRRSCGNPRSSPQRCPSGRARITTLHC	34
26	MSSAAQCPTHGQAP	14
27	MPQHLLAAQACGRRRSPLTDCKSWTTTTGTCSRR	33
28	MGQRTSGTYPARPLTTSTPCGRTCWKTL	28
29	MRFSVSNQRKEAVSQPALSYSQIWESVYARRWPSMMWSPFFLRS	44
30	MTLAVSTQRSPTTTSVLR SQFTNVVTWPPKPD RP	34
31	MCRSPTMHQAKGCTTSPVIPP PPSHGLRGKQLDTLQLTPG	40
32	MRPLCGQG	8
33	MALAHFHSIVTLQVRSIGWLHASGNLGYHPCESGDIGPGASALGYCPRGGGPPLVASTSSTGQ	63

34	MPGDLGVPPRDC	12
35	MAPVTPWLSA	10
	MRLRRPHGVHSACRRPPRRRCQGPRAWPGSGGRRELCNRESARLLFLYLPLSFVLF-	
36	DHPSFRLRGAQRVRDIPCHERLLQLKYCV	87
37	MSRAHGQLPPHRQVRSGVSGSHHSRCA	26
38	MRLGSLVDT	9
39	MGVCSAALPSPGGRARLCLLVDDAADSPG	29
40	MAVAPALAGFTTTSLCHGPRDGCIVRRRGFCRSGTLDLVTTIL	42
41	MVVTIFYHQGRGALASVGPPS	21
42	MRGPSRANL	9
	MHVSAEGRWGSCLCPNGLHEAGRADRHVHLQPSYPATGLGPRGPTRPCGGSGARRLLRHGDQDHHLGS-	
43	RHRGVWGHHLGSARLRPKGKGDTPGPGR	95
44	MHLWQLRPLLGHETC	15
45	MHPGGCEGGGLCARRVHGNYYAVSGLHGQLIPPGR TAVISSGPPTRSHWQRQEY	54
46	MCHPDSRLQLGSHLHH	16
47	MGSNVEVSHTAETYAARANTLAVQAGSRPK	30
48	MWSTDHRTCQKRFHEDRRA	19
49	MRARTGCSSAHFHHRPLPHHSRNG	25
50	MHYPPCLSGR	10
51	MDRRLDHAMRCGGKQAAHQ RVEQLFAAPP	29
52	MLLEGLCSLSSCEAPGLHDARERRRPCR YL	30
53	MFLQCVGRPRCIRQKGVLPHP	21
54	MPQETWGTTLASLETSGQERPR	22
55	MNGELNTPGQ	10
56	MSVVQPPGPPLPGEP	15
57	HCV polyprotein	



Table 2d (Seq.ID Nos. 167 - 241)

HCV 1b ncOrf's 4- 6

No.	Sequence	AA
1	MICREASISTLCSHAAHGPFITASRD	25
2	MAYWPGVFSSPFIGWGAGRCLPLQKVGVGTA	31
3	MHRGRPTHWRNMMLSAPSRILVGAGPRGGQST	32
4	MKSPWGFSLISRYSPGTRLAAQESTGIRMRSRPEEGWRPHHRGPSSRIHGLPDLGIR	59
5	MLWHKPCYGGAAKSCSTR	18
6	MCRTLSSRRHPH	12
7	MIRSCRRS	8
8	MSPSRKAQTTG	11
9	MVAVTQPGIG	10
10	MGTLRCQWSCPSRSGNPPPA	20
11	MFHATCCCRS	10
12	MPSMMLLRGSQAEWISLLSTVSR	23
13	MSQGLATWTPPREQQPPLVWWLFAVTRALSA	31
14	MMEVGPEPWRTPWLGMLPGRGSCLLPAWSGTRSVHLCG	38
15	MCYSRSLSQSRPYSPSSERLLPRQRRLR	28
16	MTAVRPGGMSCP	12
17	MVSRNAPRGAPASRRGPGPH	20
18	MVTRSRVPDLQKPRRLTMQPSLGPWHKLVVVKPARAGATAIRHREHMPPQGPACL	55
19	MYSRTSCLAAAACC	14
20	MALVRARTRGSGCWRLPFPLSRGCARQQRQSVASQSRP	38
21	MALPGGGVLEAARHSY	16
22	MPTPTESRSRHSMNQRGRARDRL	23
23	MIMLPSQELTGVCCLAVSHAARARGVVGSRRV	31
24	MACLASGAKSQHW	13
25	MSFSVTVESKQRVSYEKPMGFFDFQVFTRNSTRCPGEYWNPYEEPITT	49
26	MMVVSIGVTVSSSKSFHTEWMLTALLDRFRTSFAP	36
27	MLWWRSKELLNALMGSLSSAAHGVKAPVHV	32
	MEEYDSTSDPLSPSSEAWSGRAVAVPLSTADDSELPKVLVASSAKAEDTEDSVRTTVLFLRGGGIGGA-	
28	LIGGNHPCCTTGGT	82
	MGIAAGNFLDFRRISAGTDTLSSSSSARSGSKESRTTTLFSDSTRVMFPPISCRHRRRLASMRASGET-	
	WWWVHVAFKEGADNWLAEELAKEGGDPLANLRLAVSAVMWEGSVSMEVSTATSGSGSHGSCDPTRY-	
29	WLSPTWNVTSSRRRGLHAGAYLCNRTPTSEKNSGAGTWHGHFTLSV VMPVT	187
	MGNVPCHVLLQVLGPTILMEPFLTCPVICAPHGQVVCMMPSRQTPLYPRWHEKKGTGSCGRSLD-	
30	WSQVLKSVNTVHIQSQTSLSHEPEHGVEQSSLIHWWSLFSS	107
31	MAGSRLTRSSVEGISPLMTLKATSAPATPAP	31

	MSTSTTFPRPMLPTAAPAMPAPTKEAALGGASWAATHPPKMLNRRVLWVVSGLVIEAVNAINDAIAGFP-	
32	GRVDKPAKYCIPLMKFHMCFANVSRARHLDSTTGAAASACLVAVCSNPSAFCLNCSASCIPCSM	
	MTTLPVVRQYAAARAARTPPTSTQVLVTTSRADMHAMMYLVMGWVRVTSFWTAPSLYSKGVGPCSVGFS-	
33	RMRHFHI	76
34	MWVRPVKTLNQNSRWSWQTGNPGVFR	26
35	MPEGRSPGVTNL	12
36	MPLLPLPVLPRRCERDTAS	19
37	MVKVGSKLKSTVWVTHVLQSITESKSPV	28
38	MTDTSSPR	8
39	MRCLPPLMASMGMALP	16
40	MFGCGTVDTPGGVAVASTTSRAPAVSAWSRTVPMPIVVESVEWHSSHIMMS	52
41	MVLTPVLMLGSIPCALDIYAPNPKVAATDGLRTSTLYPWAAYAAGTLVLLPLPVGACRWAT	61
42	MDSTGTKSTAFATPRVHTAARKMPTACPEGQSSGPPEEPFK	41
43	MTSACLVTK	9
44	MMQPSRPRVCWE	12
	MGARSRHPRPSRLSAGPRSISFPLRAETGRPKMMSPHAAVSAPQVMILVSMSEKTTGSTATARSRR-	
45	PAWAQSRSGVRWL	79
46	MYVPVSAPSFMKAIWT	16
	MPAWSTMSGPSMASRSLVMSKISSGWTAHVRRMMASRPRTLRGGTHTCKCASALVIKYNH-	
47	HMSLARNTL	71
	MYQAAQKNTRKERRPCAPATDAALRTTRFSKVASAWAISSIIHKQAQTRASARRRKSSRTYSHLIT-	
48	TETTTDPTPYRYCTSTIF	84
49	MVKLIVQG	8
	MLHGGPPHVLVNPVLFIVHQPQNQLPCGGRVLLSSSTSVSFSPQLYVGTPEERSVVPTTTGLGVKQYTG-	
50	PHTCDAGTIPHGWGA	82
51	MGRQLAMRSGHPDALNLCA	19
52	MNPVWRESLQFRAVLLMCQLPLVFTSWIF	29
53	MSTTACGIRSSCDTTRAVVGQDFIIISQAMR	31
54	MLLFLAASVGVSATQQREKLLSRTQGTHPGVCMIMSAAASYTILELEQSFVTWYIPDTLRTS	61
55	MVKQDSKAKRKIEKEQPGRFPVA	23
56	MYPMRSAPHRVVSMTLPKLRDLRRGSVGPQLGREPRGDRSHPAHPIPSLP	51
57	MMHGLRDLPGHSQAPYQAVPQGLSRPNTTRLAVSRGHAQISRH	43
	MRLTDLSQLAVTRAKMEPPLKKEERKREKEGKEKKKKKKKKKKNRKWPIGLECLAPRSS-	
58	VGEQVDAYPYRK	71
59	MSPDSQGWYPKFPEA	15
60	MESFNDLR	8
61	MWGRQLAGFLYG	12
62	MVAQQRVAQRVDGQLAFLRSAWRDQGACPCVGH	33
63	MVGSAACRLQGRRRQLAS	17
64	MPRVAAGLRPDDPHGTVFDMSGDLCSTWAGGLHDAVSPPDSLVPALAREKRDSE	54

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MTENEMPSPPDGFNGDGFAIEGDLSSIRQGHLLDVVWHGDRSRRRSGGEHDKPRSSRLRLVQD-	
65 CADAQDCSRVS	75
66 MALITYYDVISAPRATTIGKKLAIGRVCDGGACGNGPYPSDVGVTVCRLRHIRPKP	57
67 MSRDQVKV	8
68 MVNGPTHAVDAGRQEGLC CGGNHLNLSLDLVLVPACKASDDATK	44
69 MVVNVRACQRAQLHEGHLDIMTPSDLPH	28
70 MNEPLSAHEVRHSGYASLEHHERTEYGEQEF'GDVKD	36
71 MDRACKEDDGIAASPNIKRGDPHLQVRLGPGDKIL	35
72 MRSGHRRRRIEDHQVL	15
73 MEVDQSSGQSR	11
74 MVYPGHVAHLVSGSWDGQTRQOS	23
75 MRQGP GSAS	9

Table 2e (Seq.ID Nos. 242 - 288)

HCV 2a ncOrf's 1 - 3

Genbank Accession No.: AF238485

No.	Sequence	AA
1	MTPGIGRVTWVRSSIP	16
2	MTVPMTASPGSFRRRSSTSPGASRAREWEIHHGAGYRSHQMWLCSSAAPSRACGRTSTWS	61
3	MAVGTSTAPP	10
4	MPARTFCAPRTVLGSILTPLTSNVVLGPGSRRGAWSTTLTGSGTTPAQLTIPSSR	55
5	MACHLPLQNMSFDGSG	16
6	MASYILSSF SWLLGTSKVGWSPWPPIPSPAYGPFAYCSSHCNRLMPMMHLCKGS	55
7	MALYGLPPYSARVWCLT	17
8	MTTSPLCRIGLPTACGTWRSL	21
9	MDSPCPPDSVGRFSLAQLTATPPRGGSFSPPSPLTPSRHEVSWAP	45
10	MLRPAVEKAPKSLSRTLPRGIKC	23
11	MASIPTLGLESEL	13
12	MANSSPMGAARAAPMTSSYATNATPWTLPSSASEQFLTKQRQPESG	47
13	MGERFPCLTSREGDT	15
14	MSSRRPFGAWAMLWHTTEGWTSP	23
15	MFPLVSEPDQGLIAWCSVSATTQGLRGMSLRQRRLP	36
16	MPTSFPKQSNRGRISHT	17
17	MRLLMKWRNVPLKRLSLKRGSGWPRC	26
18	MARAFRGPSHSRSTLARSPPWRTSSICCLGFCLRVPWWESSARAFCAATWGREKARSNG	61
19	MCGTGFAPS	9
20	MRSRLPLGSIHL	12
21	MMWTWWMPTCSWGAM	15
22	MPSSSWPSKPSASPLQAAIQASLQGRTPPTPAVGRPLMSWPFRQVLPPPCPPSRGSLGIQTWSPTR	67
23	MTPSCAAPCHTPGPGP	16
	MDMGPRRFAACPGGPLTSSPCGRTSWKTHKHQFLRPSWPKMRCSAWTPPRGVRKQLALSFTLTS-	
24	VLGSARRWPFMMSHKSFLRQ	85
25	MDSSTPPPSGWSFS	14
26	MTPDALTLPSLRETLELRRPYTRLAPCLRRPVLPYTR	37
27	MTWLSSQKARGLRRTSGT	18
28	MCLWHSAYRAAADTT	15
29	MLQLYGSAWS	10
30	MPGHLGVPPQDC	12
31	MAPVPPRFSSLLGPQ	15
32	MQLLHLPGYHHWASYGVGHDELVTYHHDPLRDARPRGHRHH	45
33	MGHFAIRG	8
34	MWHSPREVRVRPSVLFHPQPSRGGHDR	27

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35	MVRLHVDELHWFHQDLWRATLPH	23
36	MWFWALAHAEFPGRPLPLQALALPLHS	26
	MGHLALLFLRLARFVDWSTPPPPKYRGRTIHVWPVTCPYKICRSMGVGSALIPSPSGRQGLRLRVDAY-	
37	LAGPGRGSTREAGRLARCERS	89
38	MALLPTAPRTAPTGLCL	17
39	MGYHHILPGCGV	12
40	MRGHLTWTPRVRPTRSGDSPWPS	23
41	MDRLPRSWQ	9
42	MRRMPRRGRYHHPRHRNSS	19
43	MAQSGAILGQTHVELH	16
44	MDEQAHS�CFQRKPRRPYPLRDGVGCVAACDPTAWLPYYN	40
45	MLCEGPSGLQSCGDSCAHNAGMRR	24
46	MVGKHHPVCSNYMGPHGPDDTFFLHPYGPRHSGPGP	36
47	MSVVQPPGPPLPGEP	15
48	<i>HCV polyprotein</i>	

Table 2f (Seq.ID Nos. 289 - 359)

HCV 2a ncOrf's 4- 6

No.	Sequence	AA
1	MCHQDHADPYSWILDDVSQP	21
2	MGWSQLARLLQGEELCADLGGR	22
3	MDLHSVHPGEKLWRG MGRGDVVSSGSKGYEPVHPLDRAFSRPHVAAQNARADDSHHQGTRRQNPRQQIDDLVHGGLLAR-	15
4	HDLECDGPRNARAI PRQDIHQHLAQAYAAAYSSPH	99
5	MCESDLVGNRAQTV	14
6	MVLAHQARRVEIRSKPYGSLRWKLI PRSPCVVALTEHHAIKHP	45
7	MAEDQVSPSLDVRQGKRSPIEGDLTLLPEGHLLYIGMGRHRPRGSGRGQYS	52
8	MCLGQIRPKPQGGSHRGIKH MQVPDLVGLGHSWWCAVVTKGGRPRDDVECFNGDEVYGLSHAPRAHSCPEDPDSVAPGAKHRSPRG-	20
9	PLQSRKRSRGE	77
10	MLPKTVRGAQKVRAGIEVGSNAARWRATSLGETSGVHPRAAEP	43
11	MRDSTPNSGGSRVHSSGHQKDDNDLGPRSLHREVGQAENAPMSSTNDVYDDLGAHVSDHGGSG MPSDGTQVDGAIAFLHKPVVLRDDNEHLGCQHYPAAEVPHVESRAERSGHHDHVDVRPQALREGAALLH-	67
12	SHIW	73
13	MRESSGNATKRGAYDGDVPHEVGEAAR	27
14	MPGVIGAPRGTRTSGGQEPSCPAESLVPV	29
15	MCAEGRRQARVTFQLWLGGPEDSRSTPIRTFQN	33
16	MLSAPGHIPVWGGHQEGRNTWS	22
17	MLSRETPPAGRGSTGIHKMPPSLPEEAFV	29
18	MTWSSTRRSHPPRSK	15
19	MVLRARGRSFLRPSGRESPEPLWTQTLSGSHRPP	35
20	MAPIAGSPRSLPQMGVTPALSAALQPPP	28
21	MDLLAWTSIHQYRAQGHKEAETRLQMN	27
22	MRRGPPKCPRHTPPGYPPAPCPGLCCLQQPPLGH	34
23	MPSWKPPQDSLVLVLTVLRGTECR	23
24	MKPPQQRVVCPGPV	13
25	MRRRLPRPPQLGPTCWS	17
26	MWRCILSQDV	10
27	MRNSPPIALFGKSGHLCV	19
28	MPQHSSPCPEGPPRAHHTFSLNGRRSSVSLP	31
29	MWSTLWPPRSSQF	13
30	MRPSPPPRR	9
31	MHHRHKPVGAVRGAVGKRAIGR	22
32	MTPAVVGCCSTGKHLSHSPPTCKWALQVYRSCPRLGWG	39

33	MASYLLDW	8
34	MYFPLSRTGRTRGRGGPPPEAAR	
35	MALPGGGGLEAVRHSY	16
	MYPMRSAKPHVRVSMTLPTLRDLCRGSLGPQEGREPRGDRSHPAQSPSPFPYRGQGYPG-	
36	FPQDLFVERRSLGMCWRLPRGWDRSEVFLVVRTPNLGPLRGNKYTPPTIWPPPGNLTSCGRRLVFLVFL	129
	MSPPPAPTVNQLDKSRRRASCVSLSLVFTAQLKRYRPQTAALPPREMRDAL TARARLF-	
	HALRGGAPSF LRAEATRVSSWGVVVCRRKASSPCNLSIMAGRSRGLTEYTDPYISKLRWS-	
37	RVSWAIRMEKKCVIRTMRTTHIVGAYWMMF PNH E L T G E C L T V S Q A A R A I G V V G S L V R	177
38	MTTKSSPHTSIVGATIPAALQAARAF T	27
39	MVF F M L V V S T P L A R Q R L Y P Q V W P L L L N I G P P T	32
40	MAVRASSGKEQAWYMASSVLSL SV T V E S K H R V S Y E K P I G S F L S A H A F K R N S T R W A G E Y W N P	62
	MMVVGIGVCESSRRSFHTDLMWL TAL P D K L R T S L A P Y P Y L D L A E W G G V N W H A S K -	
41	VRSFALTLEAASLMSFKTES	75
	MEQHTTESSSSEQVDQDPESEPGAASPPWEGGRSSTWSGSRSGSPGSPSRGG-	
	MEEVEPVSERANSSGGVRPPESAASAPVERPESPLGGGWPKVLMASCWRASPMVLSLRPTVRRL LGG-	
42	GVGVFLGGGRAQPATVGGW	138
43	MNRLASTMSTS	11
44	MDINTSVS GSGSQGS	16
45	MAVLKFGAGFGMHWPSV	17
46	MLAPQGHRVVMMPVPAHTPL	20
47	MVQTQSHTSR SHEPAHGMGQSSVIQLWSLLSRLVIVREPSSWVTRCDASDSVT	53
	MSLFIHWTAPSPGPTWRRRMPAQMTPTTRAPGDKIPGSR L M T S S M E G F S P D M I L N A T R A P E M P A P Y P A R -	
	I S T S T L P R P M L P T A A P T R P L T T K P V A P A G G A I W D A S Q P P R M L R R I V V L V D N G L V R A A L N A I M E A T A G -	
48	FPGSVDSPARY	148
49	MPLMKFHMCLAQNCSTLGHEASTAGCMSWACLEACCNKPWILDF SISAIRCPSSMRAALEAHSSISSKAS	70
	MCKRPMME TH P V A K Q Y A A T A A K T P P A R T H V L V M T S R S A C M H V A M Y F V T G C V K V T S L V T E P K R Y R R G V G -	
50	PTRVGLSRVRHFHMTSQDGGGALALAHTVA	98
51	MCVRPVKTASQNSRWSWHTGKPGVLKYALSLTVVSAGVSSYHAAPAS	47
52	MRASVATTTTSP	12
53	MPRRAAASSSHFFFQKIKCLPPLM	26
54	MPRMVVASTAWHSSHMMMS	19
55	MAAPVVTVLTPVLMGLMPCALDKYAPNPRVAATEGLSTSTLYPWAAYATGTLVLFPLPVGACKYRTW	68
	MSSASTGKMSMDLATPREHTAARKIPTAWPLGQSTGPPEDPFKVERGLGESNAPRLSPRLRAGMTSA-	
56	FRVTRYRSTAPHEHGSKDLVPGGLGHPTKSPSALEYICVTGPREPARVLLPAPW	121
57	MDVPRKDWVTVDRTWISPACSVLSRPFVMLTIMAPKRPRVCWA	42
58	MGARSFHPLEV	11
59	MSPHAAVSAPQTM T F F S I G L K M I G S T A T A K S R R P L A A Q S D I G A R W S	46
60	MSNTTPGQNMVVAHIMPSRPPRACMGGTHS	30
61	MASPRVRR	8

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MYQAATKKMTKYRKPLQLAALAACKTTSFSSAASAWPSKISIHTQAQTLASARRRNKSTTHSHRTTYFV-  
RAGDRPYMYCTSTIFWWRWSRPVDKAGKSEKEQGKMAHSVVECNRGDSWLLSLSSKSQRSPRVKL-  
62 HAAVSLCSIPPTYILILKME 154  
63 MRQGGAPQVLVKPVEFIHVQPNHDPRGGRVLFNRKTSVSFSFPHV 44  
64 MCQLPLVLISWMFCLEPGERRPAKLSVL 28  
65 MTTTLAHAPCIEK 13  
66 MMSMMTSGTRIT 12  
67 MVVVGQDFIIMSHAIRCPVMVPRMEQLHSCTNQWCSGEIMNIWAASITPPQRSPT 55  
68 MSMCVRKPCVRAPRCCTATFGETGIQHRDVFP TL SHGTHPGTWRTAA 47  
69 MLSLEQSLVTM 11  
70 MVIQDSRASKKIEKEQPGRFPVA 23  
MYPMRSAPHVRVSM TLP TLRDL CRGSLGPQEGREPRGDRSHPAQPSPSFPYRGQGYPG-  
71 FPQDLPVERRSLGMGWRLPRGWDRSEVFLVVRTPNLGPLRGNKYTPPTIWPPGNLTSCGRRLVFLLVFL 129



Table 2g (Seq.ID Nos. 360 - 404)

HCV 2b ncOrf's 1- 3

Genbank Accession No.: AB030907

No.	Sequence	AA
1	MGATLRHESLPCEELLSSRRKRLAMALV	28
	METRVAVGQVGSCPLAGLVLLGAPATPGIDHAIWAGSSTPSRVVLPISWGTSLSLAPLSEASPEL-	
2	WHTVLGSKWTG	76
	MQRGIYPVALFLSSYLLFCRALQCQCLQWKSGTSALATTPIMIARTTASPGSSLTQFSIFLDVSHARMT-	
3	MVPCAAGYK	78
4	MRPPIPPARQWAGPLGALLASLSLVPNRTSN	31
5	MTACTRVSWPPCFMPTNSTALAAPSVCCLPAVGWMI FVSGGEPWNTRPTSPMLKT	54
6	MLPMLSVEQGP	12
7	MDFLQLLRNTS	11
8	MGRCGSSSFLRRPGT	15
9	MTTSPPCQLGRPRVCGTWRLPWSLSCSAQWRRRSSCGGLRQWHVETSCMASRFPRG	56
10	MATPPRGSS	10
11	MSRPGRSRFCPPSHNPSWGHLFRGFSGRYITGLVTRPWLAPEDQSPRCTPAQRGTSDGLVPPGLSH	67
	MIDGVHCCRQGLSQPSKDHPEPCALGDTPWACSERPCAPGVWPNLLTSSRLNLSTSLDGRPVFLT-	
12	TARHQLCPKLTRWATCTHRQVAGRAPRSLPHIPVRGIKCSC	108
13	MASF SRMEAAQPAPMISSATSAIQWTLPPSLASEQSLTRLRPQVLGWWF	50
14	MRARSLFMARLSL	13
15	MSSQQPFGAWASMPSPPTGVSTSPLYQLKGT	31
16	MSHQAKGRLGCSTA	14
17	MMPGQLGTSRLRLRLR	16
18	MPTSSPRRSKEEITLRI	17
19	MIRWLWPLTRKSYMRPLMRWKNAPPKPPSLRKSGWRRCLNLRY	44
20	MLPLLTTWRSLT/PRCA	16
21	MIVTWWMPTFSWEAM	15
22	MIVSLLYHQST	11
	MWRGSLGRWQTKCSALSKTPMTPVTPLGRIPEETASSSPLARLPLQMRDHCPPCLPLRGSRGTLT-	
23	WSLSQRDPLPLPRGSVRSSSTRTL SRGLQSPIKRILLSAAPCHTPGQEPS	114
24	MTQSCRTLSGLPLRLVRGSSQ	21
25	MRCSVLI PPRAEKSQLASSYTTLGSGCAKRWP FMTLHKSFPRQ	44
26	MGSNTLLQNGSIFSSKLGEVRRQTQWGSMT PAASTQPSRRGT	42
27	MGLTPSHCTHTLPTNSHGWLRLSGNLRLPLERGRVGRVL	40
28	MPDPAYYSFAYSILA	15
29	MNHSPVRNYCLHAESV	16
30	MSGHLGVPPQDC	12

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MGHDAELVTNSYHDPRLRCSRSVGPNGCLRRPLGCGIWLGLFLHAGSVGQGHCHPPSCCGSGCDHLF-			
31	HRRDSGPDRWELCWPL		84
32	MRYRPSSVGLRAGLLLYS		18
33	MRSTTLPH		8
34	MHRKFHHLQGADVCRGGGA		19
35	MQFHTRRPLQIGR		13
36	MLLLRPTGTIYWPVAPSPKHRGRAVPLWTFSSCYEIHRRKVGMMGGPPFPVAGRRQDLCMPLDAHHTGPS		68
37	MGSPPGGPRGA		11
38	MWRHPAWPPGFFREAR		15
39	MGPGWGGASRRGSLLPGDRLHLHHWPHTPE		30
40	MRLQSRPH		8
41	MAQDRITILGQTHVELHQWHTVPGGTLHLTGKSRSGINDGFQRRIN		45
42	MFGVLAPGHLGVGMFHSRL		20
43	MRSKHLGPRPLGHENNRPEDLPKHVAGNLPQOLLHRRALCAKTPS		46
44	MWARGGEVANQPSE		14
45	MSVVQPPGPPLPGEP		15
46	HCV polyprotein		15

Table 2h (Seq.ID Nos. 405 - 479)

HCV 2b ncOrf's 4-6

No.	Sequence	AA
1	MRLTDLSQLAVTRAKMEPPRKEEKKKIRKKRKKKKKNKKKKKKKKEN	46
2	MCAMRRRQAHVAFQLWPAGLVD	22
3	MSWCSPCW	8
4	MRTPLGPSYFPKL	13
5	MSRSQEGCSLDGPREVVVPGTFSWSSTLMVQKAHDHPLPQSWNRGSQERSPWRTQFGSHRLP	64
6	MPFYGWYR	8
7	MPLRDFPVRWRVPPGTVCH	19
8	MMTAWLAVCPGPVLWPVVGGLVS	23
9	MRHTCKCPIAPSQFSLYVDYGRQRPEGQSEW	31
10	MRQGPWCSSRYLSVRAGSPPGKFGAQLVACCCQKNWASV	39
11	MHPVYHLSSGPE	12
12	MPLSQPPTR	9
13	MAPVVETL	8
14	MWPRGPLCPLSTRPP	15
15	MHRSWRLPATGKGGPIPTLRCIS	24
16	MATPPTQWWSAAVDSADPYPLPICSGLRV	30
17	MLQRIYAPPPLHTSAP	16
18	MDNATVCKGSLSGTWGSTRALLHT	24
19	MALGGNASSTASCLQHW	17
20	MGHIQEDGELR	11
21	MALPGGGGLEAVRHSY	16
22	MICRETSYGTLCSHAAHGPFITASRD	25
23	MPTPTLSRSRQRSNRRGRACDTL	23
24	MSPPPAPTVMNHPDKSRRLASGNGVSLSFVFTAQLKR	36
	MMSEALTARARLFHALRGGAPSFLRVAATRESSWGEYVCNEKASSPCSLSIMAGRSSGLTEYTAPY-	
	ISKLRFWFRVSWASSMEKKWVIMTIRTQIVGAYWMLPSQELTGECLTVSQAAR-	
	VIGVVGSLVKKYRRRPRESSATDTFEEQDVISKSYSGLGRSPGGAEYLVIASVKALRFRSSSSLPWLSE	
25	MTTRSSPHTSIVGSTIPAALHAARALM	217
26	MVFPMLVVKTPLARQRL	17
27	MDSSVLSLSVTVESKQRVSYENPIGSFLLPQALRRKSTRSAGEYWNP	48
	MRRAGFFPPLAGSIQNTSFLAMAVSIGVCWSSRRSSHTDRMWLTAPLDKLRITSFAPNPYRDLAEWG-	
28	GVNAQASSTERSLALTLEAARLTSCKTES	96
29	MRAPVQEYDMEQQITESS	18
30	MTSHSPSEGGADLAGNSRSGSPGSPSRGGMEDSDPASEAAVSPEGCWTLSPVVSAPVE	59

	MESRESRTITLESDSIRVTSPPMKRLASTMSQSYAVLWVQVAFKDGADSWLAEEELACEGGDPLASR-	
31	LA AVS AV MW DGS VN ME AN TS VSGSGS QGS	96
	MGKVPCHMFRQVFGPVI FMVFKRTWP EMFAPHEHRVVMTPVPAHTPLYPFWQEMKGRPGILGSNFAD-	
32	SQFLKSVRMEH THS QMSRSQDPEHGTGQSSVIQACSLLSKLVIVSELN TC VTRSEASDSAT	128
	MTPTTKAPGDKIAGRRFTTSSTEGFSPLMILKATRAPEMPAPYPARTSTN ILPRPILPTAAPTRPLTK-	
	FVAPAGGAIWEANHPMMFKRMVVLVGSGLVNAALKAIIDATAGFP GKVESPARYCMPLMKFHM-	
	CLAQNCSILGHDDCMAGCMSWACFVACCRPSILDLSISAIRCPSSMRAALEAHSSISSKASYKISLSGA	
33	TTT	206
34	MRPMMEMQPVARQ	13
35	MTSR SACMHVAIYFVTGWVRVISLVTAPKRYRRGVGPVSVGFS LVRHFHITSHEGGGAFALAHTVA	66
36	MCVRPVKTASQNSRWS	16
37	MVKVGSRLKSTI	12
38	MTEKSPVYPVIRASVATTTTSP	23
39	MPRRAAASSSHFFFEWQNIRCLPPLMEARGIALP	34
40	MLAWGVVTVPGGVAVARTTSLTPAVSAWSRTVPMPRMVVASTEWHSQMMIS.	52
41	MLGLIPWALDM	11
	MSRDSTGMKSIDLATPLAHTAALNKPTACPLGQSTGPPDDPLRVERGLGDSNAPRLSSFLRTGMTSA-	
42	FRVTR	72
43	MAPRRPRVC	9
44	MGAKSFHPLEV	11
45	MSPHATVSAPHTMTFFSIGLNTTGSTATARSRKPWAAQVDKGERWS	46
46	MVINSIWIYLAPARCLTRVHTRSRA	25
47	MTATQMI PSRPPRASRGGTHC	21
48	MDMIINMTSPSSPCSAASKA	20
49	MKNHSGPLALAA LAECKMMSFSSAASAWPSMMSIQRHAQILASASNRKRRTTHSHFTMYFVTAGESP	67
50	MVKFTVHG	8
51	MRQGGAPHVLVNPVPFIQVQPNQAPRGGLVLF SRKTSVSLSPQL	44
52	MSSTLVTLVSYSKVPHPIRKSSSPRQEDKRSQGPELLNLLA	41
53	MKPVCKLSLQLRAVRFMCQLPLVLINWTFCWAPSLKRP AKLP TVRPTVAPVE	52
54	MAMTLAHAPCMEK	13
55	MVRVGDQFSIMSHAMRWPVI	20
56	MEQLHSWVKLWRSGDTIRACDTIITAPHTSPTYRAEQTVAAITITSTCARRL	52
57	MLLFEQSLVA	10
58	MFLISTEDTGT VTHDRRASKKIEKEQPGKFLVA	33
	MYPMRS AKPHVMVSMITLPKLRDL CRGSLGPQVGRDPRGDRSQPAQPQPSFPYRGQGYPG-	
59	FPQDL PVERRSFGMGWRLPRGWRSEVFLVARTPNLGLPLRGSK	102
60	MRHAVKDVAPAGAHGEPPG	19
61	MLVFQEVLP HGPDVVNGPPG	20
62	MEPHKRV TQRADWQLLLLGP TWCYEGSCPGV	31
63	MGGTGSLQGRGGQLAR	16

64	MLRDLNVLRRCHPPNSGLIIRRGFWHTRPFCVTIDGEGSLPHV	43
65	MVSPRGKGDQSVHPLDRPLSLADVAAQDCCANDSHYQGARGQNSR	45
66	MGQGNLVGHGTQAV	14
67	MTKGHLLYVSVGSCHRTGGRGCG	23
68	MALVADDDIIGAG	13
69	MQDVSTCHCLSPPHDDLLLHWAEHDLHGHRQVPQTLGRPS	41
70	MSHQGTHS	8
71	MLHPPYIHPHLEDGEIYGAWIMPQSVRVVYQAPGGQPGPCSTLNIGSIWVLPKTV CRAQ MPAVRPHVFNIGDVGLVFQGSPPDTKIIQPTAGRQTLGAARAVEFVGIKQGGHETRVQAVIAVEGG-	59
72	PVYVPAAVGID	77
73	MAAEDNFQDQLGNTSSVGEDHGKSW MTLVDGTVALLGKVVAFWRYYKSLRHDHGHPTHISHVQSRADRSCHYDHIDVCSQVVSECTAVFYSHIR-	25
74	CYLYPAAQGTIVILAWDTSRKMENCVSELPGDAVVRAIISGVVASADVPDFH MPGVAGAPSRTRPARGQEPTCPTATLVSIQRPRISWLSPLAGGAPIFRDGLASPTRLGSLGSLP- CRAHTQPGAPARQQVNSANDLAATRELDVLWAAVCVSFGFSLRFRICAHGARSTRPP-	122
75	GALASTLSGSTTRPFATQRYSSASSLAGARPNDRT	156

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Table 2i (Seq.ID Nos. 480 - 517)

HCV 3a ncOrf's 1 - 3

Genbank Accession No.: AF046866

No. Sequence	AA
1 MALVRVSCSLQAPPSRESHSGLRNR	25
2 MVMRAAGGQGGSCPRAAPVHLGAQMTPGGGPAIWVKSSIPLRVDSPTSWGTSSAPPWEASQEPSRMA	69
3 MRPMTSFCTHPAAYLVFRTTIYPRAGPQ	28
4 MPPEGLLAFLVWAPNRNCSWLTPMARGTSTALP	33
5 MLTSPVLLMTNRTAGTTTHLDLVKLSRHQVSAVLYTASHHRQWS	43
6 MPRACQPTPGVRMIPMCSCWSPCGLPVVGGLGARG	35
7 MGVGGIPEMSQTSSAPPTASGNILRPHTAGVVRGPG	36
8 MSNTFMALDLAWWDGR	16
9 MRGRVKTALLSALGSWPSSASLPYHPGTSIGSAALYGGTSTPYVDASPPSKCGSPPYLHAGVGTVSSC	68
10 MTIGRWVGDCWPRSQHTPSKLGAFLL	28
11 MVQVRERSRAPNIPRSKCTQM	21
12 MPMSSLLGAGGTPQRACSVLDLSPVSKVPLEVLLCALRGMLQGSLLGGLCAPEV	53
13 MPRPAAVKAQRSRPLTWHKDILFSC	25
14 MGSTPTSALGTAPLQLVPN	19
15 MNVMPKTLAYWVSARS	17
16 MCPSYQQQETS	11
17 MRFPAANVVAVRAEVDVHTDMSPPVKDRLECLTRLFSVSAMTRAARGTISSPLRPQSD	59
18 MPTFCHRLSSRDITSRT	17
19 MDLRFFYIGWGLSKMKSACHTPSQNTSWHACQLWK	36
20 MRWRSAHKPRTSSKLRQ	18
21 MELVSQAPWWLLRSWEENSPLRTWSTCCPPYYLRVLSSSV	41
22 MFPRAMLQRGSPHC	14
23 MKZTQALVVTTGCVSSGTGFVRCCPTSSHGSLRLRCQRSPGCPSPFVKRDTRACGGGTA	59
MGPCGLQGRVHVLTCGTVLSPSMSTPPDPVHLVHHPTTLARYGAWLPTATLKCAEWGTSIILRG-	
24 PQKMSSSVRAKYRLSSSLKWMG	87
MT PSSRWLQSVSRNLPSILQPFLSGLGQTTILHCWTAGKLRIMYHQLSMDVPYH-	
25 HGALRRSLLLGGKEQFSWTVPMCPRRYVR	83
26 MTPAALTQLSLNRTSGWKRRYTNAATLNRPGK	33
27 MIWSWWPRVTASMRMGQP	18
28 MLHSPPTTLSSSHLAPPTSPWHGTTTRGGGTITSPVMPPLP	40
29 MDHSPVRNFCLHAESA	16
30 MPSKAQQLQAHHFLQAGVGSLDRC	24
31 MYSQFHIVQGEDVRGWVRAPVYRRLQLDQGGALRYRRS	38
MGAEMGVRHPHFPPPSGPTRVRCPLADADDNTSRSSLGEPCHAERRRRRCWDTRYRLVPGGLLCGVV-	
32 RAGQTCPGGDLQPDGPLAPSFARPHAPPTGVCVVG	101

33	MVEPVHHM	8
34	MRVRPPSVGPPLTCTRE	17
35	MRCHTTPTRRTWGGGGTVDEQAHRIRIPGQPRFTNALCSRERCCSEGHRIAEFNSCHKPAPAVTPVDQ	68
36	MARGCQQLR	9
37	MCLTTTGRSAGPSSSEEKNNNSAGRFQCVRGVTCASGKIISVLETAGRE	48
38	MLIHASSRGRTGRSGLELRLLVHR	24
39	HCV polyprotein	15

Table 2j (Seq.ID Nos. 518 - 587)

HCV 3a ncOrf's 4- 6

No.	Sequence	AA
1	MESFNDCW	8
2	MVVEHLQSVEGNLPLTLRSASRRR	24
3	MMSQQGVAEWADGQFLLSTTRCYQGAGPRVRHRAADHALLLAVTNGGPRVATQVRIARFSLERRHG	67
4	MDSWWYIIRSFPVAVQQWRIVVWPSDRKGWRILGRFLETLCSHRELGVISFGPQRF	57
5	MRPMLASGLQRRS	14
6	MRRVSQHRGQHRNIWFWLTGELRSYRVGIQPYRESDLLS	39
7	MEVPHSAHFNVAVGSHAP	18
8	MTGYCCPARTACRHHAVPPPHALVSLLTGNEGQPGERWHNLSREP	45
9	MGGNPPPEYVEKHSLVGRQGTGD	23
10	MLVPEGLKLLPVGSSYYGLNDSLGLGSLQQSKDFFLELVGYCLSLLDVRGGL	52
11	MTHNHNAAD	9
12	MAKDVKPPPLEQGYRSLTVEGDLTFRAQGHFFDVRMWHSDAAWGSSCR	49
13	MTFITDNHIVCPPGATPVREKLTVGIGIGQFGTSCNGAVPSADVGVDPGTRHERAKA	57
14	MKVSYLIALWNSRRS	15
15	MPRRAHNRTSRGTFTETGERSRTEQARCGVPPAPSRDDIGIAGNQV	45
16	MFGARERSRTCTMVNSPRNPPHCCT	25
	MQQWMLLAAVTIFDIAALPPGPVASGGKPVLEPTHEHPHLEQCEIDCTWVMPKPVWIVDHAAGCQPG-	
17	PRTTPAVCGLRMFPEAVGGAEEV	90
18	MIKQPSYEPGVYGLITVQGSADVVPRAIGVNQLQFLLAGHTKKASKPSGGMSCRATGGICYGIDP	66
19	MGPGYVEQGLGHPQDVRHRHTQSGEPIHHHIPSHSMS	38
20	MTTYRSGGCSDDVPDCHCRCHWGPARGYIVVLNTRYAAGCVQNDVIGLIHNTAIGTVVGEDVEARRIPPL	69
	MREGSCDASHGGADERDVPHEVGESTRKGIDDFQTQIAGPPGVIWAPRWTGAARGQEPPCPPAAL-	
21	ITIEGPRVPGLSPGPASALTRLGDRLSSSAGL	97
22	MARRFPREDRSSSQSDPWWSVAS	24
23	MSMTLSRTPLPGRGAPWK	18
24	MIFPLAHVTPRTHWNRPAELFFSSEEGPAERPVVVRHIHGQLVVHNPELSSGPTVEDCSLA	62
25	MNQESQPLFQTPPV	14
26	MEGTHAQGGALPSRR	15
27	MEGRNGGVSPHPLQ	14
28	MDKVYVVRWCTH	12
29	MYAALQAAWTHSSHDRLLLPRKDSVSTSRPPATRPCIPFDRK	43
30	MYRVYLGPIYGHVDVCGCKPHLGEQCGSRWKRWPG	34
31	MPPRSNPRPRETYRRWNRSVWHQL	24
32	MDSAREQYILVPRKRPGPLCFYRCRSGHEGILPDSSVEQQEELNCQRKMGT	51
33	MMDKAGLLAG	10



34	MGNAKAGMDSRPCSGVSTRAPHHTGCMWPQDVS	33
35	MPGQLYKV	8
36	MLRHRPLKT	9
37	MDGSRAGTGATLPTRSPHYHRGAKGTRAEPRITGLRSDAPWG	41
38	MALPGGGGLEAARHSY	16
39	MPTPTVSRSRQSSK	14
40	MSFPPTPTVNQMDKSNWPARGSGVSLVLVRTAQLKR	36
41	MIACKSSGVTE	11
42	MEKKCVIITMRTQMVGAYMMMLPNQELTGV	30
43	MSCSVTVESKQRVSYENPKGVSFFEVHILSRRSTRC	35
44	MMVVGIGVVVSSSKSSQTERIWLMLLDKERTSFALYPNFDRAE	44
45	MVSMRAFTLDARSFTSFNTVL	21
	MGSFSSSALHGVRAPVQYDIEQQTTLCSLSLTVDQESQLKSGSPGSPSRGGMDEHDESDSPPGEG-	
46	GTLEVVLDCVSTPEEELFSSCGFKDGNDFSASARNAADTLEPSS	113
47	MLLPISCRHNKLAFTSSASG	20
48	MGKVPCHMLAHVRGPASRMDPFFT	24
49	MKGSPGSAGIILAESHDLKSDSTEQTQSQMIRSQSSLOGLG	41
	MSLFIHCTAPSPGPTCRRSMAAHITPTTRAPGDSMAGNRLTMSSAVGSSPPMILKATKAPETPAPY-	
	PARMSSKTLPRPIPPMAAPAKPLTTNAEELWGPAK-	
	WVATHPPSMLKNIVWLVRGLVTEAVNAIRDATAGLPGRVERPARYWIPLTKFHICLCQKASSFCQLVAT	
50	MGSMTACCWVARCSNPRTFSLNWWAIA	198
51	MYGAACEHSSSISSYC	15
52	MHAMTYFVMGCDKQISFWTGFNRYKRGVGPCSVGLSRTRHFHVSSQLGGGACARAHTVAW	60
53	MEKVGSRKSTYCSSTATLQSMTESKSPVYPVMRASVAQTTTSPVVGMTDTSRPL	54
54	MLECGTVMLPGGVRVAKTVSLTPAVSA	27
55	MKEPKPSVAATDGFSTRTVYPCAT	24
	MNCRAFATPLVHTAALKIPATCPEGHITGPPEEPLRQARGLGLSKLAVESPLRRAGMTSASRVTKYK-	
56	SAEPQAHGSRDLAPGGAGHPTRS	90
57	MTLISMGLNITGSVATARSRLPAAAQCCIGARW SYR	37
58	MLSMIWKYFPPITERTSMQRRSTSTCARTK	30
	MTPSLLPRASKGGTHTWRADSHLMVYWFHHIRRP IQCLYQGDKVKKPKRAKTPAPRVALSSPDHAYAR-	
59	WGSMTSKARGQRPVRL	86
60	MRMTNSHFSAHPTMPDPTP	19
	MFWWRCIRPVDASAGMGVKEQGSMASSVVECNCGCCSLRSRSSISQRSPLVQLQAAVNRC SNPPTNILTL-	
61	NNVKLTVHG	78
62	MQRGVNQGPAPHRLYVASGCFLKQSVGQKRSDSFPEFPPPP	41
63	MSQGEAPHVLTPNVEFIHVHPNHRPPGGRRDSSRNTSVSFAPQV	44
64	MLASVKGPHPCCLKKVMGLQLLSL	23
65	MNPVFMDSLQFRAVLLMCHEPLVLTSCSFCWAPTCLKRLVSPLVA	44
66	MMIATLAQLPCME	13

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MPQWAPAIMSNKVWGTRRTCATAIPRAGNQFIIISQAIRCPERWPGYSEQLQVWTVVWR-  
67 RGLNVKACPTRKTAPHISPT 79  
68 MTSSASYTILLLEQSLVRT 19  
69 MYPMRSANPHVRVSMTLPKLRDLRRGSFGPQDGREPRGDRSHPAHPQPSLP 51  
70 MVFLLVFLCGLGSVLMHGLRDLPGHSQAPYQAVPQGLSRPNTTRLVISRGHAQISGY 58

Table 2k (Seq.ID Nos. 588 - 640)

HCV 3b ncOrf's 1 - 3

Genbank Accession No.: D49374, D26556

No.	Sequence	AA
1	MALVRVSCSLQAPPFRESHSGLRNR	25
	MSCRVGAHNWVCAKQVRLPSDHNLDGVSLPPRHARARAGPGPSPGTLGPSTGMRAVVGQDGSCP-	
2	PAVLAPAGAKMTPGVDPATWVRSSIP	91
3	MRLAYICLPTTAPTGALCMRPTT	23
4	MSQDIVWLGI	10
5	MGHGTLTALP	10
6	MVPVRTDHIAGTIHPDPVT	19
7	MSVGPSTALHPRWWWAPLILKACQLIGLV	30
8	MMPRLPAAGPGPGLRQGVW	19
9	MNIDSQPPATGRGESAVILKIVTAVSNNHCSIQRLTR	37
10	MPPSGPGCSCSSGSLPYHHGISTGLAVLSGGTSMFYAGVRPPCKYGSPPCLFEVVGTV	58
	MTTCPPYRTGLPRVSKDWRWPRSPSSLVLWRLRLSPGVQTQQAETSCAGCPFRRGWAASCCWVRLTI-	
11	TRRWDGAYCPRSQHTPSKLG DYLELLSPA	97
12	MVLGRGLLLVTNGPRFKCTPMWTRTW	26
13	MLHRDILS	8
14	MGLTPTSVRGHAPSQVPVNSPTPHTASSSPMGVVLEAPNT	40
15	MNVTRKTLPPYW	13
16	MAKPSHWQ	8
17	MTQVVPGMTYNLLRPQCD	18
18	MTPSCHRONRA	12
19	MRCGNVSYA	9
20	MMRWKNVPSLLLTSSKHRLSLSNSRTKSSACCKGRANKKLKFD	44
21	MGLGSPAP	8
22	MYHQHTMSPRATRQOK	16
23	MTSGTGSVSYLVTLRPGFRPRSCPRCQAYPF SHVKRG TREY GEGMG	46
24	MAPSPSMNTPLGRVHPSPTITRVPCGA	28
25	MSRCVGGILITWWGPRTTA	20
26	MLLLVSPF	8
27	MQMGPSFHANPSRTSQ	17
28	MGRMCPRHSLPWQRDLRRRNKRGQAHPPE	31
29	MLTLGPPSVTPKSRAWFAVLCHTPGLAP	28
30	MTITKMYSR	10
31	MFVPCPAKP	9
32	MTSGRRRGYTNVVTLNQRLGRQSALSQSTCTSGVPCITAKDSNAVIAAAALAASCLPALATQ	62
33	MNHSPVRNFCLHAESV	16

34	MTGSFLGTTRSMPGNLGVPPRDH	23
35	MALAPPRFSPQLGPK	15
36	MRALRRNRQQQHIVLDTDFTDGGRQAPWCDHRVDPKSCEYVGGPANAVLSTIRRRRLRGRVPCGTSVHL	69
37	MCVDEQYRVCKDLWGSPLQHLWGDEGH	27
38	MPYRLFQEAP	10
	MLIYTYAPPVNRHTPPPEHRGRAIPLWCWFCRSGLGSQLGVRRPRLPPSGGRTRVCGLDDVDTDF-	
	SGGSSNGELGDAERPQRSCTTGLRLVPGCILRRMAHPGEARSADNLWFDRPVAPSPARPPAPSACLRLD-	
39	GRRRCHHRGRGAPAPRVLYLITMV	159
40	MGPPPACSR	9
41	MAPTVPDL SIRPANS GTIWN YCHQPDR	27
42	MSRARRYLHTGYRHGAGSSRDSRGEADGTGNRDP SRQHGAAS	43
43	MSHTPEADSARPYSSPV	17
44	MFPVCSLHRASTGYRSAIQQSPRLAAKGEPTRS	34
45	MAESGGVLATAHVELCERDPVPG RSLHTARQPCRGFPYGLHRLCNQPPHNQPDYVL	56
	MCCSVAPACRFPWGRSSAVDEQTHSVRISGEPCITNTLCPRERRGSKSNSIAELSNRHPIASPVT-	
46	PVDQRGLS	72
47	MSKGVQGS MARGWGDDNALPLWGRLYRTRKEWVHEDSRIRPLR	43
48	MPGASARVLHRVRRSEAPPLCSSL	24
49	MRTRAGR RSVNLDVARSCSHHRRHSGPAPCARFTSIGS	38
	MEGPNLRAARSSRVCLATNSSRTSASPPQKEDNQARWVECVRGTPCPGREIFPVDET-	
50	GRDRHILLRSRYRIHR	73
51	MQR RGKTTYQSTQQLVAETPQSCLLYVISKRRTSEEGYLRQTASAR	48
52	MLSCPPPLRPVEVRV	15
53	MRLSPLPR	8
54	HCV polyprotein	15

Table 21 (Seq.ID Nos. 641 - 712)

HCV 3b ncOrf's 4 - 6

No.	Sequence	AA
1	MAGSGTRHAVINVVPADTDKPTRKI	26
2	MESFNDSW	8
3	MFGDSRVKATSVV	13
4	MLHSLFGRVLEPVGRPHRCN	20
5	MVIEHLQSVENLLLTCCGASR	22
6	MRPVRLTSGFQ	11
7	MQSYTEGDLVPQKGLTRRSIAVEPHSV	27
8	MSIPHPTHLDITVGGHAPQGTRVIVRGDGCTRPSGVFIDGEGAMPHVSAEA	51
9	MVPPRCERYESVHPLHCSFPAYMPAQHCSTYHANNQRSRG	41
10	MPHDDDTTY	9
11	MSQSGKHSLPEV	12
	MAEYKVSSSLDHCQWEGFAIKGDFSVTGEAHLDIRMRHRDAAGRGRGCQYRQPHP-	
12	GCLCLIQHRAITQYGGSVLRVTFIADHDVIGASRTTPIGEELAVCGVGEFGTGCDGACPRTDVGVNPIGF	126
13	MVNSPHDPYPYCRTQEGLGGRGQHLHLTSHHVLIPTCQAGDNSSK	44
14	MEQWLLLTAVTIFKITALSPRPVAGG	26
	MFMSSEYHSDLEYREVHSARIMPQSVRVVYQTPWRKPGPGPAAGKRGIMVLPETIGRAFKVGLICFN-	
15	VLHPPIDVARGSPSTSLYKPC TVHPHTSKPPALGGSQRGQQEDI	110
16	MISDRRGHTRVLDGHR	18
17	MSEGSCDAPYRGADERNVPHEVGKSAR	27
18	MPRRRLRSKMKSA PSRRWAVGRLQGEQNIWSWPP	34
19	MKTLRGSSSTSTS	13
20	MLPRKRAGDESPQMLAPSPP	20
21	MVL LWRQSRSM T	12
22	MTPRPILRQFRASHRTQRWILYLLLRMC LSLPVSSSTGKISLPGQGVPRTHSTHRA	56
23	MKGAKEGCSFVWPR	14
24	MEVNRAQGAGPLWRR	15
25	MKAGTHLHMNAILH	14
26	MGFLGRRSWPPPRNEYPPPYAPRHNCRRSRATGHASNCARGRVYSAQWCIH	51
27	MRERVCLAPWA	11
28	MLLLLLPRRSRGHSVLVIHGSPEMRTL	27
29	MLQVPLGVWLPNLQGC	16
30	MVGSP LHERRQWLDMPPSMQSLGPAVLPVTRSGHLYESVR	40
31	MLSVALWSQQVVGHTRNNLRHSTHIAPPSQTCRTAAPLE	39
32	MDLALGQNI PVQHKRRGLWCFCRFQWGREGILLGRTPGRQGGWNCH	46
33	MLRSGTVGAIPSSCNRQPD PATTRGPTAPKRATRTRCLRRLCLHPR	47

34	MRRRMQPGTRRNPVVPLR	18
35	MSMAILASQSLNGAVVVAHCGHDLQDHSALPSSSCRRLRIDVHVLLRTF	49
36	MVCPHWDHLC	10
37	MCCCCRFRRRARIRVSARSRRRPHTQCSCWSSRW	34
38	MALPEGGGLAARHSY	16
39	MPTPTVSRSRQSSKWRVRARDTL	23
	MSFPPTPTVNLERSWPAVGNVSLVLVVRTAQLKRYRPHILAFPPWAMSLARTARARCLHARRG-	
40	GIPSFLRAPATLLSSVGE	83
41	MIAGKSSGVTE	11
42	MEKKWVINTMRTQMVGANMMIFPNQELTGVWRAVSQAARAKGVSGSRVR	49
43	MASVKARRAVLSSSTPQLSDITTKSSPQTRKDGFLRPAALLAAVALM	47
	MGPPMYRSVRALIAFRASGSRSQHWYIPSSVLMSCSVTVESKQRVSYENPKGFFDVHILRRC-	
44	STRCLGEYWNP	75
	MRRAGLRPPFAGFTLNTSFFAIMVVGIGVLLSSNKSSQTERIWFMALLDKERTSFALYPYFDRPEWG-	
45	GTREHASSKESRRPFTPDARSFTSLSTFL	96
	MAPVQEYDIEQQTTLCSSESLTVDQESASRSGSPGSPSRGGMDEYDSTSDSSPVSGESPDSAVDSVPT-	
46	PEEDVPVPVSGFVDGKDLARARSAADTFDPSSLIVLFLRGGGTGAGRVGGAHP	122
47	MGKVPCHMLAQRPDPAILMDPFLTCPVKSSPQGQRVVITPSRHTPLYPF	50
48	MPGTLGMILAESQVLKSLSTIQTQSOMSCNQSPLOGLG	38
	MSLFIHCTAPSPGPTCRRNTAAHITPTTAPGDKMAGRRLTMSSVVGSSPPMILKATRAPETPAPY-	
	PASTSSNTLPMMPPTAAPAKPLTTNAEDAAGPARCVATQPPRMLKNIVWLVVRLVTEAVKAIRE-	
49	ATAGLPGSVERPARYWIPLTKFHMCCCQNASAF CHCDCTMGRISASCWLALCSKPRTLNLNC	195
50	MTTQPTDKQ	9
51	MQAMMYLVIGCVMQMSF	17
52	MRHFHISSQHGGGLAFARAQTV	22
53	MPDGRSPGVINRYIPGLPRFVRPLR	25
54	MEKVGSRLLKSTYCSTATLQSTIVSKSPVYPVMRASVAHTTTSPTGTGTDTSRPL	54
55	MLPGGVAVASTVSLTPAVSA	20
56	MVRVPVRMLGSIP	13
57	MYVPKPRVAATDGFSTRTEYPCAT	24
	MNCRAFATPLVHTAALKIPTTCPEGHMTGPPEEPLRQDSGLVLKSLAVESPLRRAGRTSASR-	
58	VTRYRSEEPHVQGSRLVLPAGAGQPTRSWSTLVYI	97
59	MTPTTVVPKVVAVDSTCTSPVTTFLSLPVLVTIVPNSPRVCWAYAEIGDSRRHPIFL	60
60	MSPQAASAPQVITLISIGLKMTGVSATASPLRPSAAQSCMGDRWSYR	48
61	MQIRINTWARTK	12
	MSKIREGYSRLASKITLSRLPRTSRGGTHTCKAASPLHMAYWFHQIRRPIQCLYHGDKVKNPRSRST-	
62	PAPMVASSSPVQA	80
63	MCHAAQNATRYQT	13
	MFWWRCMPVDRRRIGVNEHGNI SESVVEWSSGCCSLRSRSSRSQRSPLVQLQAAENRCSPPPTNILTL-	
64	NIEKFTVQG	78

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65	MLQGGAPQVF'TNPVLFIHTHPNHRPWGGLKEVNKKTSDSFTPNL	44
66	MLASVNGPHP	10
67	MGLQLDIRSGHPPEELNL	17
68	MCHDPFELTNCKF	13
69	MISTMT'TLAQLPCMEK	16
70	MLLLEQSLVSKYRPDAFLYSRLDAGQVKQEKRRARRKIEKEQPGRFPVA	48
71	MSGMPMR.SANPHVRVSMTLPKLRDLRRGSFWPQLGREPRGGKSHPAQPQPSFP	54
72	MLHGRLDLPGHSQAPYQAVPQGLSRPNT'TRLVISRGHAQISGH	43

Table 2m (Seq.ID Nos. 713 - 752)

HCV H77 ncOrf's 1 - 3

Genbank Accession No.: AF011751

No.	Sequence	AA
1	MGATLHHESLPCEEELLSSRRKRLAMALV	28
	MAMRVAGGRDGSCLPVALGLAGAPQTPGVGRAIWVRSSIPLRAASPTSWGTYRSSAPILLEALPGP-	
2	WRMASGFWKTA	76
3	MQQGTFLVALSLSSFWPCSLA	21
4	MSPMIALTRVLCTRRPMPSCTLRGVSLAFARVTPRGVGWR	40
5	MPAAPRLGLLVSLHQAPSRTSN	22
6	MKALTPAG	8
	MPTEAASNAPTAGTTLQDLVALCPQRACVARYIASLPAPWWWERPTGRARLPTAGVQMIRMSSSLTTP-	
7	GHRWAIGSVVPG	81
8	MQHPWPGRTVLCPSSCSSALRGI	23
9	MPSSYSCV	8
	MCITISPLFETGRTTACEIWPLWNQSSSPEWRPSSSRGGQIPRAVTSSTACPSLPVGARRYC-	
10	LGQPTESWSPRGGGCWRPSRRTPSRREAS	91
11	MGYAGLSTTGPERGPSHHPRVLSSRCIPMWTCTLWAGPLLKVPAH	45
12	MSFPCAGEVIAGVACFRPGPFPT	23
13	MLPPAAVRAPRSRLRTQPRATRCWCSTPLLLQRWALVLTCPRPMGLILISGPG	53
14	MPHPSWASALSITKQRLRGRDWLCSPLPLRAPSLCPILTSRRLCPPPERSPFTARLSPSR	62
15	MPWPTTAVLTCLSSRPAAMLSSCRPMLS	28
16	MLSPGLNAGAGLAGGSQASIDLWHRGSAPPACSTRPSSVSAMTRAVLGMSSRPRLQLGYERT	63
17	MPTFYPRQSRVGRFTLTW	18
18	MGQHPCYTDWALFRMKSP	18
19	MRWKSALSTYRTSSKG	16
20	MQRLSPLLSRPTGRNSRSFGRSTCGISSVGYNTWRACQRCLVTPPLH	48
21	MARAWRELL	9
22	MFPPTTCRRAMQPPASLPYSAASL	25
23	MTPLTPSS	8
24	MSGRSPYLQKFCGSLGDSPGPCPSGRGRTTTPR	33
	MAARYHLHGPLLCLRLGKSVRWSSPNQPYLLPWPSLPPKVLAAPQLPALRATIRQHPLSPPLLAAPT-	
25	PTLSPIPLPCPPWRGSLGIRISATGHGRRSVVGPTRKMSCAAQCLIPGQAHSSPRALRKNKNCPSTH	134
26	MGQKTSVAMPERP	13
27	MIPAVLTPQSLRATSVRRRQFTNVVTWTPKPAWPSSPSLRGFM LGALLPIQGGKTAATAGAAAY	66
28	MASAHFHSVTVLQVKSIGWPHASENLGSRPCELGDTGPGASALGFCPEEAGLPYVASTSSTGQ	63
29	MPGPAGSGFAYSCSLQG	17
30	MNHSPVRNYCLHAESV	16
31	MPGDLGVPPQDC	12



32	MAPVSPWLSA	10
	MGYDDELVPYGSVGGSSAAPDPTSHHGHDRWC SLGSPGGHSVFLHGGELGEGPGSAAAICRRRRGN-	
33	PRHRGKCRPHHGWACWSPYTRRQAEHP TDQHQRQLAHQ	104
34	MLDCLPRGRNEDHRITQGSCHPDVYQCGPRPCGLARSSRFPLIDTLYLRLLGPLPGHEARRCHSRAPAR	69
35	MHVGRPGGRHEHLGARWRRPGCSGRVLPVNRLRGHSGQDRLVREAGNYT	49
	MDEPANSIRLPEGPCFPHALRAGERCSRPRHCHTQQPHCNPAPEATAS-	
36	VDKLG VYHSMLRFLAKGHLGLDMRGAERL	77
37	MPVPDPIARIFHRIGRGAPTQVCAPLQALAAGGGIIQSRTPRVPGGVAITLRARTGRSRVDVHAH	65
38	MLLQRVSRPRRRWKEGLLPYP	21
39	MPQKTWGPALASLETPGPERPR	22
	MWQVPLQLGSKNKAQTHSNSGRWPAGLVRLVHGWLQGRHLSQRVSCPAPLVVLVLP TPAR-	
40	CRGRHLPPPQPMKVG VNT PAS	81

Table 2n (Seq.ID Nos. 753 - 822)

HCV H77 ncOrf's 4 - 6

No.	Sequence	AA
1	MICREASISTLCSHAAHGPFASRD	25
2	MIPPPAARACKGAQTCVGAPRPIL	24
3	MEWYTPSLSTDAVASGAGLQ	20
4	MLQELPPRPRHTLQECPRGSPVQRCRWRRQLGQHPQRQ	39
5	MKQWRGYQAALTGPPSIVSH	20
6	MRPASRRARRTSSLGRR	18
7	MWHPWSGTRHKLLCHKHLLSTRRRQGTCCRWS	33
8	MSGNLEERASPOGLGPHWYTS	22
9	MRWSSFRPRGRQSSIPH	17
	MATESAPLTRQEQRRHTTRPPPCPVMPAEATPAGAGGEATSRRRGRRLRAPTYPSDITQSR-	
10	RTRGRTQDRASRPGLH	79
11	MWLPDVCGSNQWGRARCCCPPLR	23
12	MPCDDPLYGRDR	12
13	MALPGGGVLEAARHSY	16
14	MPTPAASRSRQNNQNRGRA	19
15	MAALPPLDRSLARTLRARCLQARKGGTPSFLRHAATLLISPGE	43
16	MIGGRSSGSME	11
17	MRTLKKWVISIILAHSVGANMIMLPSQELTGVCCLAVSHAALA RGVVGSVR	52
18	MVQSWSPAARQAARALM	17
19	MATRAWGSRSQHW	13
20	MSLSVTVESKQRVSYENPIGVFLDFHACTRNSTRCPGEYWN	42
21	MRRAGLRPPFSG	12
22	MMVVSIGVTLSRRSFHTELMWATAFLAWQRTSFAP	36
23	MGSFCSAAHGVTSAPVQE	19
24	MPEVEELPKLLVASSAKAVDRVDSVRTTVRFFRGGGTGGDRGGGSGQPWTGG	54
	MLPPIISCLHRRLASMSASGESWLAVQVALRDGADSWLAEEELAIEGGDPLANLLPAASAVIWEGSVSMD-	
	VNTATSGSGSQGNCDPTGYSWSPTLNDTSSRSKGLQGGANLCRRTPSNSVKNSGDGIWHGHLRLSVVIP-	
25	DT	140
	MGNVPLHMFQLQVLGPTILIVPFLTCPVISAPQWQWVCIMPSRQTPLYPRWQDTKGIPGSCGMSLAF-	
26	SQVLKSLSTSHIQSQMSLSQEPHGVVHSELIH	100
27	MAVTRAAASLSGT	13
	MAGSRLTRSSVEGTSPLMILNATRAPATPAPYPARMSTRTFPSPTLPMAAPARPAPTKAVAAP-	
	GAASWAATHPPNMLKRRVWPVVSGLVTA AVK AINEAMAGLPGSVDRPAKYCIPLMKFHMCF AQKTS SFC-	
28	QLVWTAGVITSARWDAVCRRPRAFCLNCSASII PCSMYGKC	173
29	MTTQPVDRQYAARAARTPPTSTQVLVTTSRADMHVMMYLVI GCVRVTSF	50

30	MYARSLTVVSAGVSSYQAQPAS	22
31	MPEGRSPGATNL	12
32	MPGFPLPVLPRR	12
33	MVKVGSRLKSTV	12
34	MRASVDTT'TT'SPLVGMTDTSRPR	23
35	MPNATSFAASSSHFFFEWQKMRCLPPLITSRGIALP	36
36	MLGWDTVTEPGGVAVASTTSLAPAVSAWSRTVPMKMDVASVEWHSSQIIMS	52
37	MGLPVVIVLTPVLILGSTPWALDM	24
38	MVVPRFSTGIKSTALATPRVHTAALNRPTACPAGHNSGPPEEPFK	45
39	MGRGESRLPLLSPRRRTGMTSACLVTR	27
40	MTGPLGDAMVLVPAPW	16
	MHVARKVWVAVDTIWTSPSTWFLSRPVRLVIIHPRRPLVCWAYAVMGASNLHPLETIPSAGPSS-	
41	ISWPLRAETGKPLMMSPHAASVAPHVMSLVSIREKTTGSTATARSRRPLCAQSRRGVRWLYT	126
42	MARSSLVMSNTRVGCTTHMSKMTASRPRTLGGTHTCSCASTLVRKY	48
	MSNIIHKQEOTRASASRRNRRTTYSHLMAQDAMLDPYKYCTSTMFWWRWMPVDKAGRVVKEHGRT-	
43	CHCVVDSSNGLSSDLSSLSSRSQSRSPRVQLQAASSLCSTPPTYILTLMNV	117
	MHLGVIQGPEPHREYVASGCLRKQSVGQSKVLLPTPPMTQGGAPHTLVNPVEFIQVQPN-	
44	QLPSGGLVLLRTKTSVSFAPQL	81
45	MCQLPLVLISWMFCLAPGVRRPTSPAVVRPAFPVTVWSASTPANSSSTTRTFQAQFPTMEKYAMPARTPQ	70
46	MSMMACGIRSS	11
47	MASAASYTILELGQSLVTW	19
48	MYPMRSAKPHVRVSMTLPKLRDLRRGSVGPQLGREPRGDRSHPAHPQPSLP	51
49	MVHGLRDLPGHSQAQPYQAVPQGLSRPNTTRLAVLRGHAQISRH	43
	MRLTDLSQLAVTRAKMEPPLKKGKRKEKKKERKEKKKEKKKKKKKKKNRKWLKRPECLPQPSS-	
50	VGEEVDAYPCSEQE	76
	MRHAVINVSPAVASREPTGQVQPASGRYWSEFELCSYCPVEEVLATYGSPASSGQKPSADAPG-	
51	PVSPSSQGRDPKFSEACGHPIDFTWRVTVTE	93
52	MESLNDWR	8
53	MGHQYHPRPQCGGKH DYVA	19
54	MATDVFCPIAKLGF	15
55	MWGRQAASF	12
56	MAVQNLQSVKCDLPLASTA	21
57	MDHRWFVVRLEPRL	15
58	MVGASCLERWSGQLASRGAGHRRG	25
59	MGGISEHGRQHGYVRFGLAR	20
60	MSSDLSSSTVAASVHNAVSSPDPIPALAGHKGNPRQLWHELGFQPLKVAQHLAYPVPDVP	61
61	MQSPQELGYSEAAEYGS DAGGCIALRHVVRRGGMVPPGGEGY	42
62	MAGRGLQEAEGLLLELLSEHHPLLDVR	27
63	MEGGFKADQTLPHLVPRWGRGLSPSAHGGLVRYQVRKVLPTLLCLG	46
64	MSEARKDALPKFKMVLAHGKPRGVHVR	28

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MSSPLDHLEGDSLAVKGDLSGGGQSNLLDVRMGHSDGARRGSSGEHNQSRPRSLCLVKDSADAQDGC-  
65 GIRGVALVTNYYVISTS 84  
MGLGHVSTKAQRCSNRGVEHQHLVALGCVRSRDLGALTAAGGSMQVGHLEALGHCWWR-  
66 GVVREHRGSHGCP 71  
67 MVIHIGASKRP 11  
68 MTSGYLPR 8  
69 MFAEAI SGAEQGVVAHPSDDTRGRSAHFGESS 32  
MTRYMAGIDRTIAVLRRPVAPGREGKQLTNKKDRPAQVPHVEGRAEGAPDKQIDMTSKLRCGEFAVP-  
70 GGHARGGHRHPTPRGVTLANARDTPRSVQDGIGRLVHNTRVRAIIGDMVKPRGIAHLVG 126

Using Web-based computer software for the prediction of possible CTL epitopes for different HLA-alleles, every single ORF was analyzed for the existence of (possibly) encoded epitopes resulting in a (relative) cut-off value of 10 or more (according to Parker et al, mentioned above).

Strain	Frames	No. of epitopes**	Epitope sequence listed in table 4
1a	1-3	232	Table 4a
	4-6	511	Table 4b
1b	1-3	238	Table 4c
	4-6	512	Table 4d
2a	1-3	238	Table 4e
	4-6	626	Table 4f
2b	1-3	268	Table 4g
	4-6	561	Table 4h
3a	1-3	219	Table 4i
	4-6	528	Table 4j
3b	1-3	231	Table 4k
	4-6	507	Table 4l
H77	1-3	293	Table 4m
	4-6	711	Table 4n

Table 3: Number of epitopes (\*\* for eight different HLA-alleles)

In the following table 4, the exact (minimum) sequence of the epitopes found with respect to the HLA alleles tested are given together with a (relative) score identifying the ability of the given epitope to be efficient in binding the given HLA type.

Table 4a  
1a (1-3)

No.	Strain	ORF	Start	AA	HLA	Peptide sequence	Score
1	HCV-1a	1	14	10	B8	ELLSSRRKRL	16.000
2	HCV-1a	1	17	9	B8	SSRRKRLAM	20.000
3	HCV-1a	1	16	10	B3501	LSSRRKRLAM	10.000
4	HCV-1a	1	17	9	B3501	SSRRKRLAM	30.000
5	HCV-1a	1	17	9	B7	SSRRKRLAM	15.000
6	HCV-1a	1	2	9	B7	GATLHHESL	12.000
7	HCV-1a	1	15	9	A0201	LLSSRRKRL	36.316
8	HCV-1a	2	43	10	B4403	AASPTSWGTY	12.000
9	HCV-1a	2	53	10	B3501	RSSAPLLEAL	10.000
10	HCV-1a	2	64	10	B3501	GPWRMASGFW	10.000
11	HCV-1a	2	64	9	B3501	GPWRMASGF	20.000
12	HCV-1a	2	44	9	B3501	ASPTSWGTY	10.000
13	HCV-1a	2	26	9	B3501	TPGVGRAIW	10.000
14	HCV-1a	2	5	10	B7	AAGGRDGSC	36.000
15	HCV-1a	2	32	10	B7	AIWVRSSIPL	12.000
16	HCV-1a	2	6	9	B7	AGGRDGSC	12.000
17	HCV-1a	2	51	9	A24	TYRSSAPLL	200.000
18	HCV-1a	2	12	9	A24	SCLPVALGL	10.080
19	HCV-1a	2	32	10	A0201	AIWVRSSIPL	24.380
20	HCV-1a	2	67	10	A0201	RMASGFWKTA	23.178
21	HCV-1a	2	67	9	A0201	RMASGFWKT	76.694
22	HCV-1a	2	58	10	A1	LLEALPGPWR	18.000
23	HCV-1a	3	9	10	A0201	ALSLSSFWPC	70.794
24	HCV-1a	3	1	10	A0201	MQQGTFLVAL	32.181
25	HCV-1a	3	11	10	A0201	SLSSFWPCSL	21.362
26	HCV-1a	3	2	9	A0201	QQGTFLVAL	18.930
27	HCV-1a	4	16	9	B8	SCTLRGASL	16.000
28	HCV-1a	5	7	10	B3501	RSFDVTSICL	20.000
29	HCV-1a	5	19	10	B3501	APPSVREPTW	10.000
30	HCV-1a	5	49	10	B7	TGRRKVAIAL	40.000
31	HCV-1a	5	4	9	B7	SPRRSFDVT	20.000
32	HCV-1a	5	8	9	A24	SFDVTSICL	20.000
33	HCV-1a	5	36	10	A0201	FLSANCLPSL	226.014
34	HCV-1a	5	33	10	A0201	GLSFLSANCL	21.362
35	HCV-1a	5	15	9	A0201	CLSGAPPSV	69.552
36	HCV-1a	6	11	10	A24	GFSITTSSTL	20.000
37	HCV-1a	7	24	10	B3501	CPRRVCVRY	120.000
38	HCV-1a	7	51	10	B3501	RPPTAGVKMI	16.000
39	HCV-1a	7	51	9	B3501	RPPTAGVKM	80.000
40	HCV-1a	7	29	9	B7	CVVRYIASL	20.000
41	HCV-1a	7	51	9	B7	RPPTAGVKM	20.000
42	HCV-1a	7	12	9	B7	TAGTTPQNL	12.000
43	HCV-1a	7	36	10	A3	SLPAPWWWER	36.000
44	HCV-1a	7	32	10	A24	RYIASLPAPW	18.000
45	HCV-1a	7	58	9	A24	KMIRTSSSL	12.000
46	HCV-1a	7	22	10	A0201	VLCPRRVCVV	111.499
47	HCV-1a	7	21	10	A0201	AVCLPRRVCV	22.517
48	HCV-1a	7	58	10	A0201	KMIRTSSSLT	18.837
49	HCV-1a	7	19	10	A0201	NLAVLCPRRV	13.910

50	HCV-1a	7	22	9	A0201	VLCPRRVCV	118.238
51	HCV-1a	7	58	9	A0201	KMIRTSSSL	53.999
52	HCV-1a	7	67	9	A0201	TIPGHRWAI	10.759
53	HCV-1a	8	10	10	A0201	VLPSSCSSA	27.026
54	HCV-1a	8	11	10	A24	LYPSSCSSAL	300.000
55	HCV-1a	8	3	9	B7	HPWPGRTVL	120.000
56	HCV-1a	8	12	9	B7	YPSSCSSAL	80.000
57	HCV-1a	9	15	9	B7	TACEIWPWL	12.000
58	HCV-1a	9	1	9	A24	MFITISLLF	21.000
59	HCV-1a	9	15	9	A0201	TACEIWPWL	11.374
60	HCV-1a	9	2	10	A0201	FITISLLFGT	62.877
61	HCV-1a	9	7	10	A0201	LLFGTGRTTA	31.249
62	HCV-1a	10	1	10	B4403	MEWSPRVGGC	12.000
63	HCV-1a	11	13	10	A24	RGPSRHPRVL	27.000
64	HCV-1a	11	5	9	A3	GLSTTGPER	12.000
65	HCV-1a	11	14	9	B7	GPSRHPRVL	80.000
66	HCV-1a	11	18	9	B7	HPRVLSSCR	20.000
67	HCV-1a	11	18	10	B7	HPRVLSSCRI	80.000
68	HCV-1a	11	14	9	B3501	GPSRHPRVL	20.000
69	HCV-1a	11	18	10	B3501	HPRVLSSRCI	24.000
70	HCV-1a	13	9	10	B3501	APRSLHMQ	60.000
71	HCV-1a	13	8	9	B3501	KAPRSLHM	12.000
72	HCV-1a	13	9	10	B8	APRSLHMQ	16.000
73	HCV-1a	13	6	9	B8	AAKAPRSL	16.000
74	HCV-1a	13	9	10	B7	APRSLHMQ	2.400.000
75	HCV-1a	13	5	10	B7	AAKAPRSL	81.000
76	HCV-1a	13	6	9	B7	AAKAPRSL	81.000
77	HCV-1a	15	1	10	B3501	MPHPSWASAL	20.000
78	HCV-1a	15	36	10	B3501	CPIPTSRRL	20.000
79	HCV-1a	15	3	10	B3501	HPSWASALSL	20.000
80	HCV-1a	15	46	9	B3501	CPPPERSLF	30.000
81	HCV-1a	15	36	9	B3501	CPIPTSRRL	20.000
82	HCV-1a	15	36	10	B7	CPIPTSRRL	120.000
83	HCV-1a	15	1	10	B7	MPHPSWASAL	80.000
84	HCV-1a	15	3	10	B7	HPSWASALSL	80.000
85	HCV-1a	15	14	10	B7	KQRLRGRDWL	60.000
86	HCV-1a	15	8	10	B7	SALSLTKQRL	12.000
87	HCV-1a	15	36	9	B7	CPIPTSRRL	80.000
88	HCV-1a	15	9	9	B7	ALSLTKQRL	12.000
89	HCV-1a	15	22	9	A0201	WLCSPPPL	98.267
90	HCV-1a	15	9	9	A0201	ALSLTKQRL	21.362
91	HCV-1a	16	11	10	B3501	CPSSRPAAML	20.000
92	HCV-1a	16	11	9	B3501	CPSSRPAAM	40.000
93	HCV-1a	16	11	9	B3501	MPWPTTAVL	20.000
94	HCV-1a	16	11	9	B3501	RPAAMLSSW	20.000
95	HCV-1a	16	11	10	B7	CPSSRPAAML	120.000
96	HCV-1a	16	17	10	B7	AAMLSSWQPM	27.000
97	HCV-1a	16	1	9	B7	MPWPTTAVL	80.000
98	HCV-1a	16	11	9	B7	CPSSRPAAM	20.000
99	HCV-1a	16	18	9	A0201	AMLSSWQPM	22.569
100	HCV-1a	17	52	9	B3501	RPPRLQLGY	80.000
101	HCV-1a	17	50	9	B3501	SSRPPRLQL	15.000
102	HCV-1a	17	3	10	B7	SPALNVGAGL	80.000
103	HCV-1a	17	38	10	B7	SVSAMTQAVL	20.000

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104	HCV-1a	17	13	10	B7	AGGSQASTDL	12.000
105	HCV-1a	17	47	10	B7	LGSSSRPPRL	12.000
106	HCV-1a	17	33	10	B7	STRPSSVSAM	10.000
107	HCV-1a	17	50	9	B7	SSRPPRLQL	90.000
108	HCV-1a	17	48	9	A0201	GMSSSRPPRL	15.428
109	HCV-1a	18	7	10	A0201	RQSRVGRFTL	11.913
110	HCV-1a	18	8	9	A0201	QSRVGRFTL	60.000
111	HCV-1a	18	5	10	B7	YPRQSRVGRT	20.000
112	HCV-1a	18	5	10	B8	YPRQSRVGRT	16.000
113	HCV-1a	18	8	9	B3501	QSRVGRFTL	15.000
114	HCV-1a	18	3	10	B3501	SPALNVGAGL	20.000
115	HCV-1a	19	7	10	A1	YTDWALFRMK	25.000
116	HCV-1a	19	6	10	A24	CYTDWALFRM	30.000
117	HCV-1a	19	4	9	B7	HPCYTDWAL	80.000
118	HCV-1a	19	4	9	B3501	HPCYTDWAL	20.000
119	HCV-1a	19	4	10	B3501	HPCYTDWALF	30.000
120	HCV-1a	20	6	10	A3	ALSTYRTSSK	20.000
121	HCV-1a	21	1	9	B7	MARAWRELL	180.000
122	HCV-1a	21	1	9	B8	MARAWRELL	16.000
123	HCV-1a	22	3	10	B3501	PPRTTCRRAM	12.000
124	HCV-1a	22	3	10	B7	PPRTTCRRAM	30.000
125	HCV-1a	22	16	10	B7	ASLPYSAASL	12.000
126	HCV-1a	22	10	9	B7	RAMQLPASL	36.000
127	HCV-1a	22	10	9	A24	RAMQLPASL	14.400
128	HCV-1a	22	17	9	A0201	SLPYSAASL	21.362
129	HCV-1a	23	19	9	A24	RYGGCLQRN	12.000
130	HCV-1a	23	19	10	A24	RYGGCLQRNT	12.000
131	HCV-1a	23	3	10	B8	TFRAPVPPFL	16.000
132	HCV-1a	23	3	9	B8	TFRAPVPPF	60.000
133	HCV-1a	23	3	10	B3501	TFRAPVPPFL	60.000
134	HCV-1a	23	15	10	B7	TTRSRYGGCL	40.000
135	HCV-1a	23	3	10	B7	TFRAPVPPFL	800.000
136	HCV-1a	25	33	9	B3501	WPSSPPEAL	20.000
137	HCV-1a	25	72	9	B3501	SPIPPCPW	10.000
138	HCV-1a	25	96	10	B3501	RSVVRPTRRM	20.000
139	HCV-1a	25	16	10	B8	LGRSGRWSSL	16.000
140	HCV-1a	25	2	10	B8	AARFHLQSP	16.000
141	HCV-1a	25	2	10	B7	AARFHLQSP	360.000
142	HCV-1a	25	16	10	B7	LGRSGRWSSL	40.000
143	HCV-1a	25	65	10	B7	APPTPTLSPI	24.000
144	HCV-1a	25	123	10	B7	APRKNRNCPS	12.000
145	HCV-1a	25	40	10	B7	ALAAPQLPAL	12.000
146	HCV-1a	25	75	10	B7	PPCPPWRGSL	12.000
147	HCV-1a	25	33	9	B7	WPSSPPEAL	120.000
148	HCV-1a	25	63	9	B7	LAAPPTPTL	18.000
149	HCV-1a	25	41	9	B7	LAAPQLPAL	12.000
150	HCV-1a	25	50	9	B7	RATIROHPL	12.000
151	HCV-1a	25	4	9	A24	RFHLQSP	40.000
152	HCV-1a	25	54	9	A24	RQHPLSPPL	11.520
153	HCV-1a	25	83	9	A24	SLGIRILAT	17.140
154	HCV-1a	25	104	9	A24	RMSCAAQCL	15.428
155	HCV-1a	25	62	9	A24	LLAAPFTPT	12.668
156	HCV-1a	25	45	9	A24	QLPALRATI	10.433
157	HCV-1a	25	40	10	A0201	ALAAPQLPAL	49.134



158	HCV-1a	25	62	10	A0201	LLAAPPTPTL	36.316
159	HCV-1a	27	33	10	B3501	WPSSPSPRGF	20.000
160	HCV-1a	27	2	10	B3501	IPAALTPQSL	20.000
161	HCV-1a	27	38	10	B3501	SPRGFMLGAL	60.000
162	HCV-1a	27	36	9	B3501	SPSPRGFML	20.000
163	HCV-1a	27	35	9	B3501	SSPSPRGFM	10.000
164	HCV-1a	27	38	10	B8	SPRGFMLGAL	16.000
165	HCV-1a	27	36	10	B8	SPSPRGFML	16.000
166	HCV-1a	27	38	10	B7	SPRGFMLGAL	800.000
167	HCV-1a	27	2	10	B7	IPAALTPQSL	80.000
168	HCV-1a	27	15	10	B7	SVRRRQSTNV	10.000
169	HCV-1a	27	36	9	B7	SPSPRGFML	80.000
170	HCV-1a	27	38	9	B7	SPRGFMLGA	20.000
171	HCV-1a	27	42	9	A0201	FMLGALLPI	294.957
172	HCV-1a	28	48	9	B4403	EEAGLPYVA	12.000
173	HCV-1a	28	48	10	B4403	EEAGLPYVAS	12.000
174	HCV-1a	28	31	10	B4403	CELGDTGPGA	12.000
175	HCV-1a	28	37	10	B3501	GPGASALGFW	10.000
176	HCV-1a	28	19	10	B3501	WPHASENLGY	60.000
177	HCV-1a	28	3	10	B7	SAHFHSTVTL	12.000
178	HCV-1a	28	44	9	A24	GFWPPEAGL	24.000
179	HCV-1a	28	25	9	A0201	NLGYRCEL	21.362
180	HCV-1a	28	46	9	A1	WPPEAGLPY	56.250
181	HCV-1a	29	3	9	B4403	GPAGSGFAY	13.500
182	HCV-1a	29	1	9	B3501	MPGPAGSGF	20.000
183	HCV-1a	29	3	9	B3501	GPAGSGFAY	40.000
184	HCV-1a	29	5	10	B7	AGSGFAYSCL	12.000
185	HCV-1a	33	50	10	B4403	GEGPGSAAAI	12.000
186	HCV-1a	33	47	10	B4403	GELGEGPGSA	12.000
187	HCV-1a	33	47	9	B4403	GELGEGPGS	12.000
188	HCV-1a	33	5	9	B4403	DELVPYDGV	24.000
189	HCV-1a	33	36	9	B3501	SPGGHVSFVL	20.000
190	HCV-1a	33	17	10	B7	SAAPDPTSHL	18.000
191	HCV-1a	33	36	9	B7	SPGGHVSFVL	80.000
192	HCV-1a	33	18	9	B7	AAPDPTSHL	54.000
193	HCV-1a	33	41	9	B7	SVFLHGCEL	20.000
194	HCV-1a	33	33	10	A0201	SLGSPGGHSV	69.552
195	HCV-1a	34	14	9	B8	GARWRRPGC	16.000
196	HCV-1a	34	23	10	B7	FGRVLPVNRL	60.000
197	HCV-1a	34	19	9	B7	PRGCFGRVL	80.000
198	HCV-1a	34	5	9	B7	RPGGRHEHL	80.000
199	HCV-1a	35	5	10	B3501	LAKGHLGLDM	18.000
200	HCV-1a	35	1	10	B7	MLRFLAKGHL	40.000
201	HCV-1a	35	11	9	A3	GLDMRGVER	12.000
202	HCV-1a	35	3	10	A24	RFLAKGHLGL	60.000
203	HCV-1a	35	4	9	A0201	FLAKGHLGL	98.000
204	HCV-1a	35	11	9	A1	GLDMRGVER	10.000
205	HCV-1a	35	19	9	B3501	RPGCFGRVL	40.000
206	HCV-1a	35	5	9	B3501	RPGGRHEHL	40.000
207	HCV-1a	36	15	9	B4403	GGLPLRDGY	12.000
208	HCV-1a	36	17	9	B3501	LPLRDGYDY	60.000
209	HCV-1a	36	4	10	B8	VCRGIRGDKA	16.000
210	HCV-1a	36	16	10	A3	GLPLRDGYDY	36.000
211	HCV-1a	37	3	9	B3501	VEGPIARIF	20.000

212	HCV-1a	37	1	10	B7	MPVPGPIARI	12.000
213	HCV-1a	39	8	10	B3501	RPRRRWKEGL	120.000
214	HCV-1a	39	8	10	B7	RPRRRWKEGL	800.000
215	HCV-1a	40	1	10	B3501	MPQKTWGTAL	20.000
216	HCV-1a	40	1	10	B7	MPQKTWGTAL	80.000
217	HCV-1a	40	4	10	A0201	KTWGTALASL	19.824
218	HCV-1a	40	12	9	A1	SLETPGPER	18.000
219	HCV-1a	41	26	10	A0201	GLVRLVHGWL	15.274
220	HCV-1a	41	22	9	A24	RWPAGLVRL	12.000
221	HCV-1a	41	65	9	A3	HLPPPQPVK	45.000
222	HCV-1a	41	29	9	A3	RLVHGWLQR	12.000
223	HCV-1a	41	27	9	B7	LVRLVHGWL	200.000
224	HCV-1a	41	47	9	B7	CPAPLDLVL	80.000
225	HCV-1a	41	57	10	B7	TPACCRGRHL	80.000
226	HCV-1a	41	42	10	B7	SQRVSCPAPL	40.000
227	HCV-1a	41	44	10	B7	RVSCPAPLDL	20.000
228	HCV-1a	41	57	10	B8	TPACCRGRHL	16.000
229	HCV-1a	41	47	9	B3501	CPAPLDLVL	20.000
230	HCV-1a	41	57	10	B3501	TPACCRGRHL	20.000
231	HCV-1a	42	3	9	B7	VVQQPPGPPL	30.000
232	HCV-1a	42	2	10	B7	SVVQQPPGPPL	30.000

Table 4b  
1a (4-6)

No.	Strain	ORF	Start	AA	HLA	Peptide sequence	Score
1	HCV-1a	1	15	9	A24	TYVGAPRPPI	75.000
2	HCV-1a	1	16	9	B7	YVGAPRPIL	45.000
3	HCV-1a	1	8	9	B_3501	RACRGAQTY	12.000
4	HCV-1a	1	15	10	A24	TYVGAPRPIL	300.000
5	HCV-1a	1	6	10	B8	AARACRGAQT	16.000
6	HCV-1a	2	11	9	B7	GAVASGAGL	12.000
7	HCV-1a	3	5	9	B7	LPPRPRTL	180.000
8	HCV-1a	3	8	9	B7	RPRRTLQGC	20.000
9	HCV-1a	3	5	9	B_3501	LPPRPRTL	20.000
10	HCV-1a	3	8	9	B_3501	RPRRTLQGC	12.000
11	HCV-1a	3	8	10	B7	RPRRTLQGCL	800.000
12	HCV-1a	3	8	10	B_3501	RPRRTLQGCL	120.000
13	HCV-1a	3	3	10	B_4403	QELPPRPRTL	16.000
14	HCV-1a	4	10	9	A_0201	ALTSPPSIV	28.516
15	HCV-1a	4	2	9	A_0201	KQWRGYQAA	21.949
16	HCV-1a	4	2	10	A_0201	KQWRGYQAAL	62.920
17	HCV-1a	5				NO HITS	
18	HCV-1a	6	12	10	A_0201	LLCHKRPPST	12.668
19	HCV-1a	6	3	10	B7	HPWSGTRHKL	120.000
20	HCV-1a	6	3	10	B_3501	HPWSGTRHKL	20.000
21	HCV-1a	7	4	9	B7	GPWCFRCRL	80.000
22	HCV-1a	7	18	9	B7	EPPGSSGAL	80.000
23	HCV-1a	7	4	9	B_3501	GPWCFRCRL	20.000
24	HCV-1a	7	18	9	B_3501	EPPGSSGAL	20.000
25	HCV-1a	7	18	10	B7	EPPGSSGALL	80.000
26	HCV-1a	7	18	10	B_3501	EPPGSSGALL	20.000
27	HCV-1a	7	4	10	B_3501	GPWCFRCRLW	10.000
28	HCV-1a	7	23	10	B_4403	SGALLVERSY	18.000
29	HCV-1a	8	12	9	A_0201	QGLDLHWYT	30.440
30	HCV-1a	8	6	9	B7	AERASPOGL	12.000
31	HCV-1a	8	8	9	B7	RASPQGLDL	12.000
32	HCV-1a	8	10	9	B_3501	SPQGLDLHW	10.000
33	HCV-1a	8	10	10	B_3501	SPQGLDLHWY	60.000
34	HCV-1a	8	10	10	B_4403	SPQGLDLHWY	13.500
35	HCV-1a	9	2	9	A1	VTELAPSTR	22.500
36	HCV-1a	9	51	9	B7	APTYPSDTM	90.000
37	HCV-1a	9	41	9	B7	TSRRRCRPL	40.000
38	HCV-1a	9	41	9	B8	TSRRRCRPL	80.000
39	HCV-1a	9	51	9	B_3501	APTYPSDTM	40.000
40	HCV-1a	9	41	9	B_3501	TSRRRCRPL	15.000
41	HCV-1a	9	2	10	A1	VTELAPSTRR	22.500
42	HCV-1a	9	40	10	B7	ATSRRRCRPL	12.000
43	HCV-1a	9	45	10	B_3501	RCRPLRPTY	12.000
44	HCV-1a	9	50	10	B_3501	RAPTYPSDTM	12.000
45	HCV-1a	10	14	9	B7	SAGCCCPPL	12.000
46	HCV-1a	11	3	10	A1	CGDPLYGRDR	12.500
47	HCV-1a	12	8	9	A1	VLEAARHSY	45.000
48	HCV-1a	12	1	9	B7	MALPGGGVL	12.000

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49	HCV-1a	12	2	10	A_0201	ALPGGGVLEA	11.426
50	HCV-1a	13	2	9	A_0201	RLTDLSQLA	20.369
51	HCV-1a	13	71	9	A_0201	SVYPNLHRL	13.757
52	HCV-1a	13	68	9	A24	RGRSVYPNL	11.200
53	HCV-1a	13	68	9	B7	RGRSVYPNL	40.000
54	HCV-1a	13	71	9	B7	SVYPNLHRL	20.000
55	HCV-1a	13	2	10	A_0201	RLTDLSQLAV	285.163
56	HCV-1a	13	70	10	A24	RSVYPNLHRL	12.000
57	HCV-1a	13	11	10	B7	VTRAKMEFPL	40.000
58	HCV-1a	13	70	10	B_3501	RSVYPNLHRL	10.000
59	HCV-1a	14	6	9	B7	ASRSRQNQI	12.000
60	HCV-1a	14	6	9	B8	ASRSRQNQI	20.000
61	HCV-1a	15	29	9	A24	SFLRHAATL	30.000
62	HCV-1a	15	7	9	B7	LARSLARTL	120.000
63	HCV-1a	15	30	9	B7	FLRHAATLL	40.000
64	HCV-1a	15	3	9	B7	ALPPLARSL	12.000
65	HCV-1a	15	7	9	B8	LARSLARTL	16.000
66	HCV-1a	15	29	10	A24	SFLRHAATLL	30.000
67	HCV-1a	15	11	10	B7	LARTLRARCL	120.000
68	HCV-1a	15	2	10	B7	AALPPLARSL	36.000
69	HCV-1a	15	11	10	B8	LARTLRARCL	320.000
70	HCV-1a	16				No hits	
71	HCV-1a	17	13	9	A_0201	CLAVSHAAL	21.362
72	HCV-1a	17	1	9	A_0201	MIMLPSQEL	18.476
73	HCV-1a	17	2	9	A_0201	IMLPSQELT	16.588
74	HCV-1a	17	1	9	B7	MIMLPSQEL	18.000
75	HCV-1a	17	7	9	B_4403	QELTGVCLA	24.000
76	HCV-1a	17	3	10	A_0201	MLPSQELTGV	271.948
77	HCV-1a	17	7	10	B_4403	QELTGVCLAV	12.000
78	HCV-1a	18	18	9	A_0201	YLVIASVKA	22.853
79	HCV-1a	18	58	9	B7	AARQAARAL	360.000
80	HCV-1a	18	30	9	B7	AASSWTPAL	36.000
81	HCV-1a	18	19	9	B7	LVIASVKAL	20.000
82	HCV-1a	18	21	9	B7	IASVKALRL	12.000
83	HCV-1a	18	58	9	B8	AARQAARAL	16.000
84	HCV-1a	18	21	9	B8	IASVKALRL	16.000
85	HCV-1a	18	16	9	B_4403	AEYLVIASV	12.000
86	HCV-1a	18	18	10	A_0201	YLVIASVKAL	226.014
87	HCV-1a	18	58	10	B7	AARQAARALM	135.000
88	HCV-1a	18	29	10	B7	LAASSWTPAL	12.000
89	HCV-1a	18	58	10	B_3501	AARQAARALM	18.000
90	HCV-1a	18	12	10	B_3501	SPGGAEYLVI	12.000
91	HCV-1a	18	46	10	B_3501	SPHTSMVQSW	10.000
92	HCV-1a	19				NO HITS	
93	HCV-1a	20	15	9	A_0201	YENPIGVFL	10.509
94	HCV-1a	20	13	9	A_0201	VSYENPIGV	10.126
95	HCV-1a	20	14	9	A24	SYENPIGVF	150.000
96	HCV-1a	20	2	9	A3	SLSVTVESK	60.000
97	HCV-1a	20	17	9	B_3501	NPIGVFLDF	20.000
98	HCV-1a	20	31	9	B_3501	NSTRCPGEY	10.000
99	HCV-1a	20	7	9	B_4403	VESKQRVSY	120.000
100	HCV-1a	20	17	9	B_4403	NPIGVFLDF	11.250

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101	HCV-1a	20	6	10	A1	TVESKQRVSY	90.000
102	HCV-1a	20	14	10	A24	SYENPIGVFL	420.000
103	HCV-1a	20	13	10	B_3501	VSYENPIGVF	10.000
104	HCV-1a	21				NO HITS	
105	HCV-1a	22				NO HITS	
106	HCV-1a	23				NO HITS	
107	HCV-1a	24	1	9	A1	MPEVEELPK	22.500
108	HCV-1a	24	17	9	A_0201	KAVDRVDSV	15.623
109	HCV-1a	24	11	9	A_0201	LVASSAKAV	10.346
110	HCV-1a	24	9	9	A3	KLLVASSAK	90.000
111	HCV-1a	24	5	9	B_4403	EELPKLLVA	36.000
112	HCV-1a	24	10	10	A_0201	LLVASSAKAV	118.238
113	HCV-1a	24	9	10	A_0201	KLLVASSAKA	64.336
114	HCV-1a	24	1	10	B7	MPEVEELPKL	24.000
115	HCV-1a	24	5	10	B_4403	EELPKLLVAS	24.000
116	HCV-1a	24	23	10	B_4403	DSVRTTVRFF	18.000
117	HCV-1a	25	46	9	A1	GGDPLANLR	12.500
118	HCV-1a	25	82	9	A1	NCDPTGYSW	10.000
119	HCV-1a	25	60	9	A_0201	VIWEGSVSM	39.518
120	HCV-1a	25	7	9	A_0201	CLHRRLASM	11.426
121	HCV-1a	25	102	9	A24	KGLQGGANL	12.000
122	HCV-1a	25	23	9	A3	WLAVQVALR	12.000
123	HCV-1a	25	42	9	B7	LATEGGDPL	12.000
124	HCV-1a	25	54	9	B_3501	RPAASAVIW	20.000
125	HCV-1a	25	43	10	A1	ATEGGDPLAN	11.250
126	HCV-1a	25	29	10	A_0201	ALRDGADSWL	36.611
127	HCV-1a	25	103	10	A3	GLQGGANLCR	36.000
128	HCV-1a	25	1	10	A3	MLFPISCLHR	12.000
129	HCV-1a	25	29	10	B7	ALRDGADSWL	120.000
130	HCV-1a	25	59	10	B7	AVIWEGSVSM	15.000
131	HCV-1a	25	29	10	B8	ALRDGADSWL	12.000
132	HCV-1a	25	20	10	B_4403	GESWLAVQVA	18.000
133	HCV-1a	26	12	9	A_0201	VLGPTILIV	111.499
134	HCV-1a	26	62	9	A_0201	GMSLAFSQV	95.441
135	HCV-1a	26	22	9	A_0201	FLTCPVISA	52.561
136	HCV-1a	26	9	9	A_0201	FLQVLGPTI	47.991
137	HCV-1a	26	16	9	A_0201	TILIVPFLT	21.989
138	HCV-1a	26	113	9	A_0201	LLSMAVTRA	19.425
139	HCV-1a	26	17	9	A_0201	ILIVPFLTC	16.047
140	HCV-1a	26	101	9	A_0201	WCSRLRSWV	11.487
141	HCV-1a	26	19	9	A_0201	IVPFLTCPV	10.346
142	HCV-1a	26	66	9	A24	AFSQVLKSL	28.000
143	HCV-1a	26	104	9	A3	RLRSWVTVR	36.000
144	HCV-1a	26	64	9	A3	SLAFSQVLK	20.000
145	HCV-1a	26	30	9	B7	APQWQRVCM	90.000
146	HCV-1a	26	39	9	B7	MPSPRQTPL	80.000
147	HCV-1a	26	57	9	B7	IPGSCGMSL	80.000
148	HCV-1a	26	117	9	B7	AVTRAAASL	60.000
149	HCV-1a	26	110	9	B7	TVRLLSMAV	10.000
150	HCV-1a	26	39	9	B8	MPSPRQTPL	16.000
151	HCV-1a	26	30	9	B_3501	APQWQRVCM	40.000
152	HCV-1a	26	39	9	B_3501	MPSPRQTPL	20.000

153	HCV-1a	26	14	9	B_3501	GPTILIVPF	20.000
154	HCV-1a	26	57	9	B_3501	IPGSCGMSL	20.000
155	HCV-1a	26	25	9	B_3501	CPVISAPQW	10.000
156	HCV-1a	26	106	9	B_3501	RSWVTVRL	10.000
157	HCV-1a	26	95	10	A1	HSELIHWCSR	13.500
158	HCV-1a	26	84	10	A_0201	SLSQEPEHGV	69.552
159	HCV-1a	26	112	10	A_0201	RLLSMAVTRA	42.278
160	HCV-1a	26	3	10	A_0201	KVPLHMFLOV	40.471
161	HCV-1a	26	9	10	A_0201	FLQVLGPTIL	40.289
162	HCV-1a	26	27	10	A_0201	VISAPQWQRV	27.638
163	HCV-1a	26	38	10	A_0201	MMPSPRQTPL	26.228
164	HCV-1a	26	62	10	A_0201	GMSLAFSQVL	24.037
165	HCV-1a	26	11	10	A_0201	QVLGPTILIV	21.234
166	HCV-1a	26	104	10	A24	RLRSWVTVRL	11.200
167	HCV-1a	26	46	10	A3	PLYPRWQDTK	45.000
168	HCV-1a	26	14	10	B7	GPTILIVPFL	80.000
169	HCV-1a	26	4	10	B7	VPLHMFLOVL	80.000
170	HCV-1a	26	48	10	B7	YPRWQDTKGI	80.000
171	HCV-1a	26	30	10	B7	APQWQRCMM	60.000
172	HCV-1a	26	104	10	B7	RLRSWVTVRL	40.000
173	HCV-1a	26	65	10	B7	LAFSQVLKSL	12.000
174	HCV-1a	26	116	10	B7	MAVIRAAASL	12.000
175	HCV-1a	26	30	10	B_3501	APQWQRCMM	40.000
176	HCV-1a	26	39	10	B_3501	MPSPRQTPLY	40.000
177	HCV-1a	26	48	10	B_3501	YPRWQDTKGI	36.000
178	HCV-1a	26	4	10	B_3501	VPLHMFLOVL	20.000
179	HCV-1a	26	14	10	B_3501	GPTILIVPFL	20.000
180	HCV-1a	26	96	10	B_4403	SELIHWCSRL	24.000
181	HCV-1a	26	87	10	B_4403	QEPEHGVVHS	12.000
182	HCV-1a	27	70	9	A1	ATHPPNMLK	25.000
183	HCV-1a	27	75	9	A_0201	NMLKRRVWL	313.968
184	HCV-1a	27	127	9	A_0201	KVSSFQQLV	80.941
185	HCV-1a	27	76	9	A_0201	MLKRRVWL	71.386
186	HCV-1a	27	80	9	A_0201	RVWLIVVSG	35.683
187	HCV-1a	27	95	9	A_0201	AINEAMAGL	27.699
188	HCV-1a	27	82	9	A_0201	WLIVVSGLV	14.054
189	HCV-1a	27	112	9	A24	KYCIPLMKF	220.000
190	HCV-1a	27	80	9	A24	RVWLIVVSG	11.200
191	HCV-1a	27	123	9	A24	CFAQKVSSF	10.000
192	HCV-1a	27	45	9	A3	TLPMAAPAK	20.000
193	HCV-1a	27	30	9	B7	APYPARMSM	90.000
194	HCV-1a	27	109	9	B7	KPAKYCIPL	80.000
195	HCV-1a	27	69	9	B7	AATHPPNML	54.000
196	HCV-1a	27	80	9	B7	RVWLIVVSG	20.000
197	HCV-1a	27	28	9	B7	TPAPYPARM	20.000
198	HCV-1a	27	92	9	B7	AVKAINIEM	15.000
199	HCV-1a	27	95	9	B7	AINEAMAGL	12.000
200	HCV-1a	27	76	9	B8	MLKRRVWL	24.000
201	HCV-1a	27	30	9	B_3501	APYPARMSM	40.000
202	HCV-1a	27	28	9	B_3501	TPAPYPARM	40.000
203	HCV-1a	27	109	9	B_3501	KPAKYCIPL	40.000
204	HCV-1a	27	105	9	B_3501	GSVDKPAKY	20.000

205	HCV-1a	27	24	9	B_3501	RAPATPAPY	12.000
206	HCV-1a	27	9	9	B_3501	SSVEGTSPL	10.000
207	HCV-1a	27	105	9	B_4403	GSVDKPAKY	13.500
208	HCV-1a	27	70	10	A1	ATHPPNMLKR	12.500
209	HCV-1a	27	75	10	A_0201	NMLKRRVWL	3.206.057
210	HCV-1a	27	82	10	A_0201	WLVVSGLVTA	52.561
211	HCV-1a	27	87	10	A_0201	GLVTAAVKAI	23.995
212	HCV-1a	27	19	10	A_0201	ILNATRAPAT	12.668
213	HCV-1a	27	84	10	A_0201	VVSGLVTA	10.346
214	HCV-1a	27	94	10	A24	KAINEAMAGL	12.000
215	HCV-1a	27	37	10	B7	SMRTFPSPTL	60.000
216	HCV-1a	27	109	10	B7	KPAKYCIPLM	20.000
217	HCV-1a	27	68	10	B7	WAATHPPNML	18.000
218	HCV-1a	27	94	10	B7	KAINEAMAGL	12.000
219	HCV-1a	27	125	10	B7	AQKVSSFCQL	12.000
220	HCV-1a	27	109	10	B_3501	KPAKYCIPLM	80.000
221	HCV-1a	27	115	10	B_3501	IPLMKFHICF	20.000
222	HCV-1a	27	32	10	B_3501	YPARMSMRTF	20.000
223	HCV-1a	27	9	10	B_3501	SSVEGTSPLM	20.000
224	HCV-1a	27	8	10	B_3501	RSSVEGTSPL	10.000
225	HCV-1a	27	97	10	B_4403	NEAMAGLPGS	12.000
226	HCV-1a	28	44	9	A1	SADMHVMMY	125.000
227	HCV-1a	28	15	9	A1	TTQPVDRQY	12.500
228	HCV-1a	28	52	9	A_0201	YLVGTGCVRV	319.939
229	HCV-1a	28	49	9	A_0201	VMMYLVTGC	51.908
230	HCV-1a	28	50	9	A_0201	MMYLVTGCV	35.524
231	HCV-1a	28	30	9	B7	TPPTSTQVL	80.000
232	HCV-1a	28	27	9	B7	AAARTPPTST	13.500
233	HCV-1a	28	3	9	B7	AGFPDKTTL	12.000
234	HCV-1a	28	43	9	B_3501	RSADMHVMM	40.000
235	HCV-1a	28	30	9	B_3501	TPPTSTQVL	20.000
236	HCV-1a	28	44	9	B_4403	SADMHVMMY	18.000
237	HCV-1a	28	10	10	A_0201	TLPTMTTQPV	69.552
238	HCV-1a	28	49	10	A_0201	VMMYLVTGCV	41.075
239	HCV-1a	28	29	10	A24	RTPTSTQVL	17.280
240	HCV-1a	28	50	10	A3	MMYLVTGCVR	20.000
241	HCV-1a	28	2	10	B7	IAGFPDKTTL	12.000
242	HCV-1a	28	41	10	B7	TSRSADMHVM	10.000
243	HCV-1a	28	24	10	B8	AAKAARTPPT	16.000
244	HCV-1a	28	41	10	B_3501	TSRSADMHVM	45.000
245	HCV-1a	28	43	10	B_3501	RSADMHVMMY	40.000
246	HCV-1a	28	5	10	B_3501	FPDKTTLPTM	12.000
247	HCV-1a	28	43	10	B_4403	RSADMHVMMY	18.000
248	HCV-1a	29	5	9	A_0201	SLTVVSAGV	69.552
249	HCV-1a	30	3	10	B7	EGRSPGATNL	40.000
250	HCV-1a	31	1	9	B7	MPGFPLPVL	120.000
251	HCV-1a	31	1	9	B_3501	MPGFPLPVL	20.000
252	HCV-1a	32	20	9	A_0201	SITESKSPV	39.210
253	HCV-1a	32	17	9	A3	VLQSITESK	30.000
254	HCV-1a	32	3	10	A_0201	KVGSRLKSTV	21.300
255	HCV-1a	32	9	10	A24	KSTVWVTHVL	11.200
256	HCV-1a	32	9	10	B_3501	KSTVWVTHVL	10.000

257	HCV-1a	33	5	9	B7	VATTTTSPL	12.000
258	HCV-1a	33	4	10	B7	SVATTTTSPL	20.000
259	HCV-1a	34	6	9	A24	SFAASSSHF	10.000
260	HCV-1a	34	6	10	A24	SFAASSSHFF	10.000
261	HCV-1a	35				NO HITS	
262	HCV-1a	36	7	9	A1	VTEPGGVAV	45.000
263	HCV-1a	36	13	9	B7	VAVASTTSL	12.000
264	HCV-1a	36	34	9	B_3501	MPKMDVASV	18.000
265	HCV-1a	36	8	9	B_4403	TEPGGVAVA	18.000
266	HCV-1a	36	7	10	A1	VTEPGGVAVA	45.000
267	HCV-1a	36	6	10	A_0201	TVTEPGGVAV	24.952
268	HCV-1a	36	12	10	B7	GVAVASTTSL	20.000
269	HCV-1a	36	28	10	B7	WSRTVPMPKM	15.000
270	HCV-1a	36	28	10	B_3501	WSRTVPMPKM	30.000
271	HCV-1a	36	25	10	B_3501	VSAWSRTVPM	10.000
272	HCV-1a	36	8	10	B_4403	TEPGGVAVAS	13.500
273	HCV-1a	37	7	9	A_0201	IVLTPVLML	27.042
274	HCV-1a	37	2	9	A_0201	GLFVVIVLT	17.140
275	HCV-1a	37	1	9	A24	MGLFVVIVL	10.080
276	HCV-1a	37	7	9	B7	IVLTPVLML	30.000
277	HCV-1a	37	5	9	B7	VVIVLTPVL	20.000
278	HCV-1a	37	6	10	A_0201	VIVLTPVLML	11.485
279	HCV-1a	38	17	9	B7	TPRVHTAAL	800.000
280	HCV-1a	38	17	9	B8	TPRVHTAAL	16.000
281	HCV-1a	38	17	9	B_3501	TPRVHTAAL	60.000
282	HCV-1a	38	14	10	A_0201	ALATPRVHTA	11.426
283	HCV-1a	38	16	10	B7	ATPRVHTAAL	12.000
284	HCV-1a	39	12	9	B7	SPRRRTGMT	20.000
285	HCV-1a	39	12	9	B8	SPRRRTGMT	16.000
286	HCV-1a	39	11	9	B_3501	LSPRRRTGM	10.000
287	HCV-1a	39	18	10	A3	GMTSACLVTR	18.000
288	HCV-1a	39	1	10	B7	MGRGDSRLPL	60.000
289	HCV-1a	40	4	9	A_0201	PLGDAMVLV	14.429
290	HCV-1a	40	3	9	B7	GPLGDAMVL	80.000
291	HCV-1a	40	3	9	B_3501	GPLGDAMVL	30.000
292	HCV-1a	41	77	9	A_0201	LMMSPHAAV	315.959
293	HCV-1a	41	22	9	A_0201	FLSRPVRLV	147.172
294	HCV-1a	41	31	9	A_0201	IMHPRRPLV	85.394
295	HCV-1a	41	15	9	A_0201	WTSPSTWFL	56.299
296	HCV-1a	41	6	9	A_0201	KVWAADVTT	29.887
297	HCV-1a	41	21	9	A24	WFLSRPVRL	30.000
298	HCV-1a	41	61	9	B7	GPSSISRPL	80.000
299	HCV-1a	41	116	9	B7	QSRRGVRWL	40.000
300	HCV-1a	41	30	9	B7	VIMHPRRPL	27.000
301	HCV-1a	41	105	9	B7	ATARSRKPL	18.000
302	HCV-1a	41	43	9	B7	YAVMGASNL	12.000
303	HCV-1a	41	106	9	B8	TARSRKPLC	16.000
304	HCV-1a	41	33	9	B_3501	HPRRPLVCW	30.000
305	HCV-1a	41	61	9	B_3501	GPSSISRPL	20.000
306	HCV-1a	41	116	9	B_3501	QSRRGVRWL	15.000
307	HCV-1a	41	71	9	B_4403	AETGKPLMM	18.000
308	HCV-1a	41	45	10	A_0201	VMGASNLQPL	60.325



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309	HCV-1a	41	30	10	A_0201	VIMHPRRPLV	60.154
310	HCV-1a	41	22	10	A_0201	FLSRPVRLVI	19.676
311	HCV-1a	41	42	10	A24	AYAVMGASNL	200.000
312	HCV-1a	41	90	10	A3	VMSLVSWEK	90.000
313	HCV-1a	41	84	10	B7	AVSAPHVMSL	60.000
314	HCV-1a	41	29	10	B7	LVIMHPRRPL	45.000
315	HCV-1a	41	87	10	B7	APHVMSLVSI	24.000
316	HCV-1a	41	33	10	B7	HPRRPLVCWA	20.000
317	HCV-1a	41	104	10	B7	TATARSRKPL	18.000
318	HCV-1a	41	115	10	B7	AQSRRGVRL	12.000
319	HCV-1a	41	60	10	B7	AGPSSISRPL	12.000
320	HCV-1a	41	23	10	B7	LSRPVRLVIM	10.000
321	HCV-1a	41	23	10	B8	LSRPVRLVIM	20.000
322	HCV-1a	41	106	10	B8	TARSRKPLCA	16.000
323	HCV-1a	41	23	10	B_3501	LSRPVRLVIM	30.000
324	HCV-1a	41	71	10	B_4403	AETGKPLMMS	18.000
325	HCV-1a	42	14	9	A3	KMTASRPPR	12.000
326	HCV-1a	42	33	9	B_4403	CASTLVRKY	13.500
327	HCV-1a	42	14	10	A_0201	KMTASRPPRT	18.837
328	HCV-1a	42	19	10	B7	RPPRTLGGI	12.000
329	HCV-1a	42	3	10	B7	NTRVGCTAHM	10.000
330	HCV-1a	42	19	10	B_3501	RPPRTLGGI	16.000
331	HCV-1a	42	32	10	B_4403	SCASTLVRKY	54.000
332	HCV-1a	43	33	9	A1	MLDPTPYKY	500.000
333	HCV-1a	43	95	9	A_0201	VQLQAASSL	13.624
334	HCV-1a	43	109	9	A24	TYILILNIV	12.600
335	HCV-1a	43	40	9	A24	KYCTSTMFW	10.000
336	HCV-1a	43	45	9	A3	TMFWWRWMR	180.000
337	HCV-1a	43	32	9	A3	AMLDPPTYK	45.000
338	HCV-1a	43	33	9	A3	MLDPTPYKY	18.000
339	HCV-1a	43	89	9	B7	SQRSRVL	90.000
340	HCV-1a	43	106	9	B7	TPPTYILIL	80.000
341	HCV-1a	43	92	9	B7	SPRVQLQAA	20.000
342	HCV-1a	43	71	9	B7	CVVVSSNGL	20.000
343	HCV-1a	43	26	9	B7	HLMAQDAML	12.000
344	HCV-1a	43	106	9	B_3501	TPPTYILIL	20.000
345	HCV-1a	43	53	9	B_3501	RPVDKAGRV	16.000
346	HCV-1a	43	31	9	B_4403	DAMLDPPTY	27.000
347	HCV-1a	43	102	10	A_0201	SLCSTPPTYI	57.380
348	HCV-1a	43	33	10	A_0201	MLDPTPYKYC	27.870
349	HCV-1a	43	94	10	A24	RVQLQAASSL	12.000
350	HCV-1a	43	88	10	A24	RSQRSRVL	12.000
351	HCV-1a	43	40	10	A24	KYCTSTMFWW	10.000
352	HCV-1a	43	38	10	A24	PYKYCTSTM	10.000
353	HCV-1a	43	32	10	A3	AMLDPPTYKY	18.000
354	HCV-1a	43	18	10	B7	RNRRTYSHL	40.000
355	HCV-1a	43	94	10	B7	RVQLQAASSL	20.000
356	HCV-1a	43	37	10	B7	TPYKYCTSTM	20.000
357	HCV-1a	43	86	10	B8	SSRSQRSRVL	12.000
358	HCV-1a	43	37	10	B_3501	TPYKYCTSTM	40.000
359	HCV-1a	43	15	10	B_3501	ASRRNRRTTY	30.000
360	HCV-1a	43	53	10	B_3501	RPVDKAGRVV	16.000

361	HCV-1a	43	88	10	B_3501	RSQRSFRVQL	10.000
362	HCV-1a	43	101	10	B_3501	SSLCSTPPTY	10.000
363	HCV-1a	43	24	10	B_3501	YSHLMAQDAM	10.000
364	HCV-1a	43	43	10	B_3501	TSTMFWRRWM	10.000
365	HCV-1a	43	30	10	B_4403	QDAMLDPTPY	45.000
366	HCV-1a	43	101	10	B_4403	SSLCSTPPTY	12.000
367	HCV-1a	44	30	9	A_0201	VLLRKTSTV	437.482
368	HCV-1a	44	9	9	A_0201	TLVNPVEFI	64.668
369	HCV-1a	44	16	9	A_0201	FIQVQPNQL	13.512
370	HCV-1a	44	24	9	B7	LPSGGLVLL	80.000
371	HCV-1a	44	6	9	B7	APHTLVNPNV	12.000
372	HCV-1a	44	24	9	B_3501	LPSGGLVLL	20.000
373	HCV-1a	44	23	10	A_0201	QLPSGGLVLL	49.134
374	HCV-1a	44	29	10	A_0201	LVLRLTKTSV	38.280
375	HCV-1a	44	10	10	A_0201	LVNPVEFIQV	19.657
376	HCV-1a	44	15	10	A24	EFIQVQPNQL	36.000
377	HCV-1a	44	20	10	B7	QPNQLPSGGL	120.000
378	HCV-1a	44	20	10	B_3501	QPNQLPSGGL	20.000
379	HCV-1a	45				NO HITS	
380	HCV-1a	46				NO HITS	
381	HCV-1a	47	8	9	A_0201	TILELGQSL	44.559
382	HCV-1a	47	8	9	A24	TILELGQSL	10.368
383	HCV-1a	47	4	9	B7	AASYTILEL	36.000
384	HCV-1a	47	2	9	B7	ASAASYTIL	12.000
385	HCV-1a	47	10	9	B_4403	LELGQSLVT	12.000
386	HCV-1a	47	8	10	A_0201	TILELGQSLV	145.077
387	HCV-1a	47	1	10	B7	MASAASYTIL	12.000
388	HCV-1a	47	3	10	B7	SAASYTILEL	12.000
389	HCV-1a	47	10	10	B_4403	LELGQSLVTW	54.000
390	HCV-1a	48	42	9	B7	HPAHPQPSL	120.000
391	HCV-1a	48	12	9	B7	RVSMTLPKL	20.000
392	HCV-1a	48	42	9	B_3501	HPAHPQPSL	20.000
393	HCV-1a	48	8	10	A24	KPHVRVSMTL	11.200
394	HCV-1a	48	8	10	B7	KPHVRVSMTL	80.000
395	HCV-1a	48	35	10	B7	EPRGDRSHPA	20.000
396	HCV-1a	48	2	10	B7	YPMRSAPKPHV	12.000
397	HCV-1a	48	35	10	B8	EPRGDRSHPA	32.000
398	HCV-1a	48	19	10	B8	KLRDLRRGSV	18.000
399	HCV-1a	48	8	10	B_3501	KPHVRVSMTL	40.000
400	HCV-1a	48	6	10	B_3501	SAKPHVRVSM	18.000
401	HCV-1a	49	15	9	A24	PYQAVPQGL	50.400
402	HCV-1a	49	22	9	A3	GLSRPNTTR	18.000
403	HCV-1a	49	23	9	B7	LSRPNTTRL	40.000
404	HCV-1a	49	8	9	B_3501	LPGHSQAPY	40.000
405	HCV-1a	49	23	9	B_3501	LSRPNTTRL	15.000
406	HCV-1a	49	22	10	A_0201	GLSRPNTTRL	21.362
407	HCV-1a	49	25	10	A24	RPNTTRLAVL	12.000
408	HCV-1a	49	33	10	A3	VLRGHAQISR	12.000
409	HCV-1a	49	14	10	B7	APYQAVPQGL	240.000
410	HCV-1a	49	25	10	B7	RPNTTRLAVL	80.000
411	HCV-1a	49	25	10	B_3501	RPNTTRLAVL	40.000
412	HCV-1a	49	14	10	B_3501	APYQAVPQGL	20.000

413	HCV-1a	50	4	9	B_4403	REASISTLC	12.000
414	HCV-1a	50	2	10	B7	ICREASISTL	40.000
415	HCV-1a	50	2	10	B8	ICREASISTL	24.000
416	HCV-1a	50	4	10	B_4403	REASISTLCS	12.000
417	HCV-1a	51	29	9	A1	WSEFELCSY	67.500
418	HCV-1a	51	32	9	A_0201	FELCSYCPV	34.527
419	HCV-1a	51	36	9	A24	SYCPVEEVL	336.000
420	HCV-1a	51	72	9	A24	RYPKFSEAC	15.000
421	HCV-1a	51	27	9	A24	RWSEFELC	12.000
422	HCV-1a	51	65	9	B_3501	VSPSSQGRY	10.000
423	HCV-1a	51	41	9	B_4403	EEVLATYGS	18.000
424	HCV-1a	51	75	10	A24	KFSEACGHPI	12.000
425	HCV-1a	51	27	10	A24	RWSEFELCS	10.000
426	HCV-1a	51	25	10	B7	SGRYWSEFEL	40.000
427	HCV-1a	51	38	10	B_3501	CPVEEVLATY	80.000
428	HCV-1a	51	77	10	B_4403	SEACGHPIDF	160.000
429	HCV-1a	51	38	10	B_4403	CPVEEVLATY	13.500
430	HCV-1a	51	15	10	B_4403	REPAGQVQLA	12.000
431	HCV-1a	51	59	10	B_4403	ADAPGPVSPS	12.000
432	HCV-1a	52				NO HITS	
433	HCV-1a	53	8	10	B_3501	RPQCGGKHDY	80.000
434	HCV-1a	54	4	9	B7	DVFCPITKL	30.000
435	HCV-1a	54	2	10	A1	ATDVFCPITK	125.000
436	HCV-1a	54	5	10	A24	VFCPITKLGF	12.000
437	HCV-1a	55	13	9	A_0201	FLLPLASTA	84.555
438	HCV-1a	55	5	10	A_0201	NLQSVKCDFL	57.572
439	HCV-1a	55	6	10	A_0201	LQSVKCDFLL	21.356
440	HCV-1a	55	8	10	B7	SVKCDFLLPL	20.000
441	HCV-1a	56	6	9	A_0201	FVVGLFPRL	16.337
442	HCV-1a	56	6	9	B7	FVVGLFPRL	20.000
443	HCV-1a	56	5	10	A24	WVVGLFPRL	43.200
444	HCV-1a	57				NO HITS	
445	HCV-1a	58	9	10	A_0201	RQHGHVRFGL	12.562
446	HCV-1a	58	9	10	A24	RQHGHVRFGL	11.200
447	HCV-1a	58	5	10	B_4403	SEHGRQHGHV	12.000
448	HCV-1a	59	33	9	B7	DPRQLWHEL	300.000
449	HCV-1a	59	19	9	B7	SPDPLIPAL	24.000
450	HCV-1a	59	15	9	B7	DAVPSPDPL	12.000
451	HCV-1a	59	33	9	B8	DPRQLWHEL	32.000
452	HCV-1a	59	33	9	B_3501	DPRQLWHEL	60.000
453	HCV-1a	59	28	10	B7	AGHKGDPRQL	12.000
454	HCV-1a	60	10	10	B7	QPVHPLHCPL	80.000
455	HCV-1a	60	10	10	B_3501	QPVHPLHCPL	20.000
456	HCV-1a	60	19	10	B_3501	LARANVPAQY	18.000
457	HCV-1a	60	6	10	B_4403	GEGYQPVHPL	12.000
458	HCV-1a	61	38	9	A_0201	LLGEHHPLL	148.896
459	HCV-1a	61	27	9	A_0201	GLQEAEGLL	11.386
460	HCV-1a	61	26	9	A24	RGLQEAEGLL	12.000
461	HCV-1a	61	15	9	B7	DSRGDNLCCL	40.000
462	HCV-1a	61	15	9	B_3501	DSRGDNLCCL	22.500
463	HCV-1a	61	31	9	B_4403	AEGLLLELL	12.000
464	HCV-1a	61	27	10	A_0201	GLQEAEGLLL	87.586

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465	HCV-1a	61	1	10	A_0201	MLRPEGLEFL	17.108
466	HCV-1a	61	22	10	A_0201	CLTGRGLQEA	11.426
467	HCV-1a	61	26	10	A24	RGLQEAEGLL	12.000
468	HCV-1a	61	1	10	B7	MLRPEGLEFL	40.000
469	HCV-1a	61	29	10	B_4403	QEAEGLLEL	12.000
470	HCV-1a	62	37	9	A_0201	KVLPTLLCL	55.674
471	HCV-1a	62	37	9	A24	KVLPTLLCL	14.400
472	HCV-1a	62	29	9	A3	GLVRYQVRK	270.000
473	HCV-1a	62	34	9	B7	QVRKVLPTL	200.000
474	HCV-1a	62	14	9	B7	LVPRWGRGL	20.000
475	HCV-1a	62	37	9	B7	KVLPTLLCL	20.000
476	HCV-1a	62	6	9	B7	EANQTLPHL	12.000
477	HCV-1a	62	30	9	B7	LVRVQVRKV	10.000
478	HCV-1a	62	25	9	B_4403	SAHGGLVRY	13.500
479	HCV-1a	62	29	10	A_0201	GLVRYQVRKV	31.994
480	HCV-1a	62	33	10	A_0201	YQVRKVLPTL	22.915
481	HCV-1a	62	32	10	A24	RYQVRKVLPT	15.000
482	HCV-1a	62	30	10	B7	LVRVQVRKVL	300.000
483	HCV-1a	62	34	10	B7	QVRKVLPTLL	200.000
484	HCV-1a	62	5	10	B_4403	LEANQTLPHL	12.000
485	HCV-1a	63				NO HITS	
486	HCV-1a	64	3	10	A1	EDEMSPPLDY	11.250
487	HCV-1a	64	76	10	A_0201	GVALVTNYYV	33.472
488	HCV-1a	64	85	10	A_0201	VISAPRAPAV	16.258
489	HCV-1a	64	36	10	A3	GMGHS DGARR	12.000
490	HCV-1a	64	91	10	B7	APAVGKELAV	12.000
491	HCV-1a	64	4	10	B_4403	DEMSPPLDYF	360.000
492	HCV-1a	64	3	10	B_4403	EDEMSPPLDY	15.000
493	HCV-1a	64	75	10	B_4403	RGVALVTNYY	13.500
494	HCV-1a	64	120	9	A1	RIDPMSLGH	25.000
495	HCV-1a	64	77	9	A_0201	VALVTNYYV	33.419
496	HCV-1a	64	90	9	A24	RAPAVGKEL	18.480
497	HCV-1a	64	118	9	B7	DVRIDPMSL	200.000
498	HCV-1a	64	53	9	B7	QSRPRSLCL	40.000
499	HCV-1a	64	90	9	B7	RAPAVGKEL	12.000
500	HCV-1a	64	53	9	B8	QSRPRSLCL	80.000
501	HCV-1a	64	71	9	B8	GCGIRGVAL	16.000
502	HCV-1a	64	53	9	B_3501	QSRPRSLCL	15.000
503	HCV-1a	64	116	9	B_3501	GPDVRIDPM	12.000
504	HCV-1a	64	29	9	B_3501	QSNLLDVGM	10.000
505	HCV-1a	64	4	9	B_4403	DEMSPPLDY	720.000
506	HCV-1a	64	75	9	B_4403	RGVALVTNY	27.000
507	HCV-1a	65	6	9	B_4403	LEALGHYWW	24.000
508	HCV-1a	65	1	9	B_4403	MEVSHLEAL	12.000
509	HCV-1a	65	8	10	A_0201	ALGHYWWRGV	23.648
510	HCV-1a	65	3	10	B_3501	VSHLEALGHY	10.000
511	HCV-1a	66				NO HITS	
512	HCV-1a	67				NO HITS	
513	HCV-1a	68	29	9	A_0201	MLAEAISGA	79.642
514	HCV-1a	68	33	9	A_0201	AISGAVQGV	21.996
515	HCV-1a	68	21	9	B7	APRVCGVRM	600.000
516	HCV-1a	68	26	9	B7	GVRMLAEAI	20.000

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517	HCV-1a	68	21	9	B_3501	APRVCGVRM	120.000
518	HCV-1a	68	29	10	A_0201	MLAEAISGAV	63.021
519	HCV-1a	68	28	10	A_0201	RMLAEAISGA	30.534
520	HCV-1a	68	21	10	B7	APRVCGVRML	2.400.000
521	HCV-1a	68	21	10	B8	APRVCGVRML	16.000
522	HCV-1a	68	21	10	B_3501	APRVCGVRML	60.000
523	HCV-1a	68	47	10	B_4403	DDTRRRSAHF	15.000

Table 4c  
1b (1-3)

No.	Strain	ORF	Start	AA	HLA	Peptide sequence	Score
1	HCV-1b	4	3	9	A24	RTTAPTQVL	9.600
2	HCV-1b	5	3	9	A24	RYKIAIAQS	10.000
3	HCV-1b	5	3	10	A24	RYKIAIAQSI	186.000
4	HCV-1b	5	15	10	A24	TYQVTAWLGI	75.000
5	HCV-1b	13	3	9	A24	SFLPMVVAL	36.000
6	HCV-1b	14	110	9	A24	SYQLSETSL	300.000
7	HCV-1b	14	26	9	A24	RGLSCSPPL	12.000
8	HCV-1b	18	32	9	A24	KQPPNKRRL	14.400
9	HCV-1b	18	32	10	A24	KQPPNKRRL	14.400
10	HCV-1b	20	13	9	A24	RSSPALPSL	9.600
11	HCV-1b	20	4	9	A24	RATPQRVLL	9.600
12	HCV-1b	20	9	10	A24	RVLLRSPAL	12.000
13	HCV-1b	25	4	9	A24	KYPFRRRSC	15.000
14	HCV-1b	29	27	9	A24	VYARRWPSM	25.000
15	HCV-1b	29	27	10	A24	VYARRWPSMM	25.000
16	HCV-1b	30	9	9	A24	RSPRTTSVL	12.000
17	HCV-1b	33	27	10	A24	GYHPCESGDI	60.000
18	HCV-1b	36	57	9	A24	LFDHPSFRL	20.000
19	HCV-1b	36	46	9	A24	LLFLYLPLSF	18.000
20	HCV-1b	36	44	9	A24	RLFLYLPL	14.400
21	HCV-1b	36	48	9	A24	LYLPLSFAV	10.800
22	HCV-1b	36	48	10	A24	LYLPLSFAVL	432.000
23	HCV-1b	40	29	10	A24	GFCRSGTLDL	20.000
24	HCV-1b	41	6	9	A24	FYHQGRGAL	200.000
25	HCV-1b	41	5	10	A24	IFYHQGRGAL	20.000
26	HCV-1b	47	13	9	A24	TYAARANTL	240.000
27	HCV-1b	53	10	9	A24	RCIRQKGV	12.000
28	HCV-1b	8	3	9	A3	RLWPERMAF	30.000
29	HCV-1b	8	33	9	A3	HMLSMAYGR	18.000
30	HCV-1b	14	60	9	A3	SMAKPSPLK	30.000
31	HCV-1b	14	27	9	A3	GLSCSPPLR	12.000
32	HCV-1b	14	54	10	A3	ILERSPSMAK	60.000
33	HCV-1b	29	35	9	A3	MMWSPFLR	90.000
34	HCV-1b	29	22	9	A3	QIWESVYAR	27.000
35	HCV-1b	29	34	10	A3	SMMWSPFLR	27.000
36	HCV-1b	36	56	9	A3	VLFDHPSFR	20.000
37	HCV-1b	36	45	10	A3	LLFLYLPLSF	20.000
38	HCV-1b	36	56	10	A3	VLFDHPSFRL	13.500
39	HCV-1b	43	37	9	A3	GLGPRGPTR	18.000
40	HCV-1b	43	16	10	A3	GLHEAGRADR	18.000
41	HCV-1b	47	16	9	A3	GLHDARERR	12.000
42	HCV-1b	1	32	10	A0201	VIWVRSSIPL	41.446
43	HCV-1b	1	20	10	A0201	LVGAPQTPGV	10.346
44	HCV-1b	6	84	9	A0201	LLWWGRPTV	981.379
45	HCV-1b	6	66	9	A0201	VLYPRRCV	75.673
46	HCV-1b	6	8	9	A0201	SLLRCSTHT	27.527
47	HCV-1b	6	83	10	A0201	VLLWWGRPTV	437.482
48	HCV-1b	6	5	10	A0201	KLGSLLRCST	26.082
49	HCV-1b	6	66	10	A0201	VLYPRRCVA	11.081
50	HCV-1b	7	7	9	A0201	FSWRTRASV	17.334

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51	HCV-1b	18	53	9	A0201	LMPWTERWL	28.851
52	HCV-1b	18	29	9	A0201	SLGRHMLSM	11.426
53	HCV-1b	18	60	10	A0201	WLHRAEARFL	108.094
54	HCV-1b	18	29	10	A0201	SLGRHMLSMA	11.426
55	HCV-1b	13	4	10	A0201	FLPMVVALGA	22.853
56	HCV-1b	14	5	9	A0201	QLTRLQSWA	27.324
57	HCV-1b	14	53	9	A0201	LILERSPSM	17.616
58	HCV-1b	14	27	10	A0201	GLSCSPPLRL	21.362
59	HCV-1b	14	53	10	A0201	LILERSPSMA	17.616
60	HCV-1b	14	4	10	A0201	IQLTRLQSWA	17.426
61	HCV-1b	14	70	10	A0201	SGGEGISFSV	10.797
62	HCV-1b	14	93	10	A0201	QASESTLWRI	10.248
63	HCV-1b	19	3	10	A0201	QEWPARSWPL	25.857
64	HCV-1b	20	10	9	A0201	VLLRSSPAL	134.369
65	HCV-1b	23	22	10	A0201	ILGRCGGWPL	272.371
66	HCV-1b	29	34	9	A0201	SMMWSPPFL	313.968
67	HCV-1b	30	16	9	A0201	VLRSQFTNV	17.074
68	HCV-1b	31	30	9	A0201	KQLDTLQLT	92.267
69	HCV-1b	33	2	9	A0201	ALAHFHSIV	108.362
70	HCV-1b	33	11	10	A0201	TLQVRSIGWL	35.130
71	HCV-1b	36	47	9	A0201	FLYLPLSFA	925.081
72	HCV-1b	36	79	9	A0201	RLLQLKYCV	257.342
73	HCV-1b	36	44	9	A0201	RLLFLYLPL	118.561
74	HCV-1b	36	49	9	A0201	YLPLSFAVL	76.550
75	HCV-1b	36	47	10	A0201	FLYLPLSFAV	5938.072
76	HCV-1b	36	36	10	A0201	VLFDHPSFRL	3195.307
77	HCV-1b	40	6	10	A0201	ALAGFTTSL	21.362
78	HCV-1b	43	11	10	A0201	SLCPNGLHEA	11.426
79	HCV-1b	45	30	9	A0201	LIPPGRITAV	16.258
80	HCV-1b	45	29	10	A0201	QLIPPGRITAV	69.552
81	HCV-1b	52	1	9	A0201	MLLEGLCSL	1267.104
82	HCV-1b	52	8	10	A0201	SLSSCEAPGL	21.362
83	HCV-1b	53	2	10	A0201	FLQCVGRPRC	22.853
84	HCV-1b	18	48	10	A1	SGEPLRHSGR	22.500
85	HCV-1b	48	3	9	A1	STDHRTCQK	25.000
86	HCV-1b	48	3	10	A1	STDHRTCQKR	21.500
87	HCV-1b	1	26	9	B3501	TPGVGRVIW	10.000
88	HCV-1b	5	12	10	B3501	IPATYQVTAW	10.000
89	HCV-1b	6	95	9	B3501	SPRIAGGRM	120.000
90	HCV-1b	6	2	9	B3501	TPSKLGSLL	20.000
91	HCV-1b	6	89	10	B3501	RPTVPESPRI	24.000
92	HCV-1b	6	51	10	B3501	RTRGLIAGTM	12.000
93	HCV-1b	6	94	10	B3501	ESPRIAGGRM	10.000
94	HCV-1b	18	25	10	B3501	KAGWSLGRHM	12.000
95	HCV-1b	18	28	10	B3501	WSLGRHMLSM	10.000
96	HCV-1b	18	19	10	B3501	APPGTSKAGW	10.000
97	HCV-1b	13	5	10	B3501	LPMVVALGAL	20.000
98	HCV-1b	14	68	10	B3501	KPSGGEGISF	60.000
99	HCV-1b	14	58	10	B3501	SPSMAKPSPL	20.000
100	HCV-1b	14	46	10	B3501	TSRRWPCLIL	15.000
101	HCV-1b	15	14	9	B3501	RPRLGCGPT	12.000
102	HCV-1b	18	33	9	B3501	QPPNKRRLL	20.000
103	HCV-1b	18	22	9	B3501	SSSRKRSKY	10.000
104	HCV-1b	18	33	10	B3501	QPPNKRRLL	20.000

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105	HCV-1b	18	21	10	B3501	SSSRKSGY	10.000
106	HCV-1b	18	4	10	B3501	KSAPRTSLTL	10.000
107	HCV-1b	20	13	9	B3501	RSSPALPSL	10.000
108	HCV-1b	23	9	9	B3501	TPRAPAHPL	60.000
109	HCV-1b	23	15	9	B3501	HPLQRQTIL	20.000
110	HCV-1b	24	10	10	B3501	RPTSCGGRRW	20.000
111	HCV-1b	24	23	10	B3501	SPAWSRRTRW	10.000
112	HCV-1b	27	15	9	B3501	SPLTDCKSW	15.000
113	HCV-1b	29	28	9	B3501	YARRWPSMM	18.000
114	HCV-1b	29	20	9	B3501	YSQIWESVY	10.000
115	HCV-1b	29	32	10	B3501	WSPMMWSPPF	20.000
116	HCV-1b	29	15	10	B3501	QPALSYSQIW	10.000
117	HCV-1b	30	9	9	B3501	RSPRTTSVL	10.000
118	HCV-1b	31	19	9	B3501	IPPPPSHGL	20.000
119	HCV-1b	33	46	9	B3501	CPRGGGPPL	60.000
120	HCV-1b	33	37	9	B3501	GPASALGY	40.000
121	HCV-1b	33	46	10	B3501	CPRGGGPPLV	12.000
122	HCV-1b	36	50	9	B3501	LPLSFAVLF	20.000
123	HCV-1b	36	41	9	B3501	ESARLLFLY	10.000
124	HCV-1b	36	28	10	B3501	RPGSGGRREL	40.000
125	HCV-1b	36	74	10	B3501	IPCHERLLQL	20.000
126	HCV-1b	39	10	10	B3501	SPGGRARLCL	20.000
127	HCV-1b	39	8	10	B3501	LSPSGGRARL	20.000
128	HCV-1b	43	30	9	B3501	QPSYPATGL	20.000
129	HCV-1b	43	3	10	B3501	VSAEGRWGSL	10.000
130	HCV-1b	45	46	9	B3501	RSHWQRQY	20.000
131	HCV-1b	45	12	9	B3501	CARRVHGNY	18.000
132	HCV-1b	45	2	10	B3501	HPGGCEGGGL	30.000
133	HCV-1b	45	12	10	B3501	CARRVHGNY	18.000
134	HCV-1b	53	8	10	B3501	RPRCIRQKGV	24.000
135	HCV-1b	54	1	10	B3501	MPQETWGTTL	40.000
136	HCV-1b	8	51	10	B4403	HELMPWTERW	36.000
137	HCV-1b	19	1	10	B4403	MEQEWPARSW	18.000
138	HCV-1b	29	24	9	B4403	WESVYARRW	18.000
139	HCV-1b	36	77	9	B4403	HERLLQLKY	180.000
<del>140</del>	<del>HCV-1b</del>	<del>36</del>	<del>40</del>	<del>10</del>	<del>B4403</del>	<del>RESARLLFLY</del>	<del>270.000</del>
141	HCV-1b	43	18	10	B4403	HEAGRDRHV	18.000
142	HCV-1b	47	5	9	B4403	VEVSHTAET	12.000
143	HCV-1b	47	5	10	B4403	VEVSHTAETY	360.000
144	HCV-1b	47	11	10	B4403	AETYAARANT	12.000
145	HCV-1b	52	21	9	B4403	RERRRPCR	120.000
146	HCV-1b	52	12	9	B4403	CEAPGLHDA	24.000
147	HCV-1b	1	45	10	B7	SPTSWGTFRL	80.000
148	HCV-1b	1	23	10	B7	APQTPGVGRV	12.000
149	HCV-1b	5	14	9	B7	ATYQVTAWL	12.000
150	HCV-1b	6	95	9	B7	SPRIAGGRM	200.000
151	HCV-1b	6	2	9	B7	TPSKLGSLL	80.000
152	HCV-1b	6	36	9	B7	SLRGGVPSL	40.000
153	HCV-1b	6	29	9	B7	AAAPSTSSL	36.000
154	HCV-1b	6	40	9	B7	GVPSLTLC	20.000
155	HCV-1b	6	68	10	B7	YPRRRCVAQC	20.000
156	HCV-1b	6	58	10	B7	GMTHPNRAVL	18.000
157	HCV-1b	6	75	10	B7	AQCIASPRVL	12.000
158	HCV-1b	6	51	10	B7	RTRGLIAGTM	10.000



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159	HCV-1b	8	39	10	B7	YGRCSWSCWL	40.000
160	HCV-1b	8	26	10	B7	AGWSLGRHML	18.000
161	HCV-1b	8	52	10	B7	ELMPWTERWL	12.000
162	HCV-1b	9	4	9	B7	EAAMPSSSL	18.000
163	HCV-1b	13	5	10	B7	LPMVVALGAL	240.000
164	HCV-1b	13	2	10	B7	ASFLPMVVAL	12.000
165	HCV-1b	14	105	9	B7	GSMCPSYQL	18.000
166	HCV-1b	14	58	10	B7	SPSMAKPSPL	80.000
167	HCV-1b	14	46	10	B7	TSRRWPCLIL	60.000
168	HCV-1b	14	15	10	B7	AQSWTKRRRL	18.000
169	HCV-1b	15	14	9	B7	RPRLGCGPT	20.000
170	HCV-1b	16	5	9	B7	CPRPSRQET	30.000
171	HCV-1b	16	5	10	B7	CPRPSRQETT	20.000
172	HCV-1b	18	33	9	B7	QPPNKRRLL	120.000
173	HCV-1b	18	6	9	B7	APRTSLTLS	12.000
174	HCV-1b	18	34	9	B7	PPNKRRLLL	12.000
175	HCV-1b	18	5	9	B7	SAPRTSLTL	12.000
176	HCV-1b	18	33	10	B7	QPPNKRRLLL	120.000
177	HCV-1b	20	4	9	B7	RATPQRVLL	18.000
178	HCV-1b	20	2	10	B7	CLRATPQRVL	60.000
179	HCV-1b	20	9	10	B7	RVLLRSSPAL	20.000
180	HCV-1b	23	9	9	B7	TPRAPAHPL	1200.000
181	HCV-1b	23	15	9	B7	HLPQRQTIL	80.000
182	HCV-1b	23	23	9	B7	LGRCGGWPL	40.000
183	HCV-1b	25	24	9	B7	SGRARITTL	40.000
184	HCV-1b	25	14	9	B7	NPRSSPQRC	20.000
185	HCV-1b	25	9	9	B7	ACGRRRSPL	18.000
186	HCV-1b	25	8	10	B7	QACGRRRSPL	18.000
187	HCV-1b	28	20	9	B7	CGRTCWCTL	40.000
188	HCV-1b	29	28	9	B7	YARRWPSMM	30.000
189	HCV-1b	29	34	9	B7	SMMWSPFFL	12.000
190	HCV-1b	31	19	9	B7	IPPPPSHGL	120.000
191	HCV-1b	31	26	10	B7	GLGRKQLDTL	40.000
192	HCV-1b	33	46	9	B7	CPRGGGPPL	800.000
193	HCV-1b	33	46	10	B7	CPRGGGPPLV	40.000
194	HCV-1b	33	3	10	B7	LAHFHSIVTL	12.000
195	HCV-1b	36	42	9	B7	SARLLFLYL	120.000
196	HCV-1b	36	38	9	B7	CNRESARLL	40.000
197	HCV-1b	36	28	10	B7	RPGSGGREL	120.000
198	HCV-1b	36	74	10	B7	IPCHERLLQL	80.000
199	HCV-1b	39	12	9	B7	GGRARLCLL	40.000
200	HCV-1b	39	10	10	B7	SPGGRARLCL	120.000
201	HCV-1b	39	8	10	B7	LPSPGGRARL	120.000
202	HCV-1b	40	30	9	B7	FCRSGTLDL	40.000
203	HCV-1b	40	7	9	B7	LAGFTTSL	12.000
204	HCV-1b	40	6	10	B7	ALAGFTTSL	12.000
205	HCV-1b	43	30	9	B7	QPSYPATGL	120.000
206	HCV-1b	43	39	9	B7	GPRGPTRPC	30.000
207	HCV-1b	43	20	10	B7	AGRADRHVHL	120.000
208	HCV-1b	45	22	9	B7	AVSGLHGQL	60.000
209	HCV-1b	45	2	10	B7	HPGGCEGGGL	80.000
210	HCV-1b	45	21	10	B7	YAVSGLHGQL	12.000
211	HCV-1b	46	5	10	B7	DSRLQGSHL	40.000
212	HCV-1b	47	15	9	B7	AARANTLAV	18.000

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213	HCV-1b	49	9	10	B7	SAHFHAHRPL	12.000
214	HCV-1b	51	16	9	B7	AAHQRVQL	36.000
215	HCV-1b	51	15	10	B7	QAAHQRVQL	12.000
216	HCV-1b	53	8	10	B7	RPRCIRQKGV	40.000
217	HCV-1b	54	1	10	B7	MPQETWGTTL	80.000
218	HCV-1b	56	3	9	B7	VVQPPGPPL	30.000
219	HCV-1b	56	2	10	B7	SVVQPPGPPL	30.000
220	HCV-1b	6	46	10	B8	LCLTSRTRGL	16.000
221	HCV-1b	14	85	10	B8	SPSMAKPSPL	16.000
222	HCV-1b	18	33	9	B8	QPPNKRLL	16.000
223	HCV-1b	18	33	10	B8	QPPNKRLLL	16.000
224	HCV-1b	23	15	9	B8	HPLQRQTIL	16.000
225	HCV-1b	23	9	9	B8	TPRAPAHPL	16.000
226	HCV-1b	25	24	9	B8	SGRARITTL	16.000
227	HCV-1b	27	9	9	B8	ACGRRRSPL	16.000
228	HCV-1b	27	8	10	B8	QACGRRRSPL	16.000
229	HCV-1b	33	46	9	B8	CPRGGGPPL	16.000
230	HCV-1b	36	42	9	B8	SARLLFLYL	16.000
231	HCV-1b	36	74	10	B8	IPCHERLLQL	16.000
232	HCV-1b	39	12	9	B8	GGRARLCLL	16.000
233	HCV-1b	40	30	9	B8	FCRSGTLDL	16.000
234	HCV-1b	43	20	10	B8	AGRADRHVHL	16.000
235	HCV-1b	51	16	9	B8	AAHQRVQL	16.000
236	HCV-1b	51	15	10	B8	QAAHQRVQL	16.000
237	HCV-1b	52	19	9	B8	DARERRRPC	48.000
238	HCV-1b	53	8	10	B8	RPRCIRQKGV	24.000

Table 4d  
1b (4-6)

No.	Strain	ORF	Start	AA	HLA	Peptide sequence	Score
1	HCV 1b	1	2	10	B7	ICREaSISTL	40.000
2	HCV 1b	1	2	10	B8	ICREaSISTL	24.000
3	HCV 1b	1	4	9	B_4403	REASISTLC	12.000
4	HCV 1b	1	4	10	B_4403	REASISTLCS	12.000
5	HCV 1b	2	20	9	A_0201	CLPLQKGV	69.552
6	HCV 1b	2	4	9	B_3501	WPGVFSSPF	20.000
7	HCV 1b	3	12	9	A_0201	MMLSAPSRI	47.394
8	HCV 1b	3	13	10	A_0201	MLSaPSRIIV	118.238
9	HCV 1b	3	11	10	A_0201	NMMLSAPSRI	27.879
10	HCV 1b	3	5	9	B7	RPTHWRNMM	30.000
11	HCV 1b	3	5	10	B7	RPTHWRNMML	80.000
12	HCV 1b	3	3	10	B7	RGRPtHWRNM	10.000
13	HCV 1b	3	5	9	B_3501	RPTHWRNMM	80.000
14	HCV 1b	3	5	10	B_3501	RPTHWRNMML	40.000
15	HCV 1b	3	3	10	B_3501	RGRPtHWRNM	12.000
16	HCV 1b	4	18	10	A_0201	RLAAqESTGI	10.433
17	HCV 1b	4	12	9	A24	RYSpgTRLA	12.000
18	HCV 1b	4	44	10	A24	RGPSSRIHGL	12.000
19	HCV 1b	4	12	10	A24	RYSpgTRLAA	12.000
20	HCV 1b	4	45	9	B7	GPSSRIHGL	80.000
21	HCV 1b	4	10	10	B7	ISRYsPGTRL	60.000
22	HCV 1b	4	47	10	B7	SSRIhGLPDL	40.000
23	HCV 1b	4	45	9	B7	GPSSRIHGL	16.000
24	HCV 1b	4	45	9	B_3501	GPSSRIHGL	20.000
25	HCV 1b	4	31	9	B_3501	SPSRPEEGW	10.000
26	HCV 1b	4	10	10	B_3501	ISRYsPGTRL	15.000
27	HCV 1b	4	47	10	B_3501	SSRIhGLPDL	15.000
28	HCV 1b	4	20	10	B_3501	AAQEstGIRM	12.000
29	HCV 1b	5				no hits	
30	HCV 1b	6				no hits	
31	HCV 1b	7				no hits	
32	HCV 1b	8				no hits	
33	HCV 1b	9				no hits	
34	HCV 1b	10				no hits	
35	HCV 1b	11				no hits	
36	HCV 1b	12	12	10	A_0201	AEWIsLLSTV	25.817
37	HCV 1b	12	3	10	A_0201	SMMLLRGSQA	13.276
38	HCV 1b	12	12	10	B_4403	AEWIsLLSTV	18.000
39	HCV 1b	13	14	9	A_0201	QQPPLVWWL	205.491
40	HCV 1b	13	21	9	A_0201	WLFAVTRAL	72.718
41	HCV 1b	13	17	9	A_0201	PLVWWLFAV	20.412
42	HCV 1b	13	13	10	A_0201	EQQPpLVWWL	15.412
43	HCV 1b	13	4	9	A3	GLATWTPPR	36.000
44	HCV 1b	13	10	9	B7	PPREQQPPL	80.000
45	HCV 1b	13	9	10	B7	TPPreQQPPL	80.000
46	HCV 1b	13	15	9	B_3501	QPPLVWWLF	20.000
47	HCV 1b	13	10	9	B_3501	PPREQQPPL	12.000
48	HCV 1b	13	9	10	B_3501	TPPreQQPPL	20.000

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49	HCV 1b	13	12	10	B_4403	REQQpPLVWW	18.000
50	HCV 1b	14	15	10	A_0201	GMLPgRGSCl	57.085
51	HCV 1b	14	16	10	A_0201	MLPGrGSCLL	36.316
52	HCV 1b	14	23	9	A_0201	CLLPASGT	46.873
53	HCV 1b	14	16	9	A_0201	MLPGRGSCL	36.316
54	HCV 1b	14	17	9	B7	LPGRGSCLL	80.000
55	HCV 1b	14	7	10	B7	EPWRtPWLGM	30.000
56	HCV 1b	14	5	10	B7	GPEPwRTPWL	24.000
57	HCV 1b	14	7	10	B_3501	EPWRtPWLGM	40.000
58	HCV 1b	14	17	9	B_3501	LPGRGSCLL	20.000
59	HCV 1b	14	2	10	B_4403	MEVGpEPWRT	12.000
60	HCV 1b	14	19	9	A_0201	RLLPRQRRL	15.808
61	HCV 1b	14	12	9	A24	PYSPSSERL	24.000
62	HCV 1b	14	19	9	A24	RLLPRQRRL	14.400
63	HCV 1b	14	12	10	A24	PYSPsSERLL	24.000
64	HCV 1b	14	11	10	B7	RPYSpSSERL	80.000
65	HCV 1b	14	5	9	B_3501	RSLSQSRPY	20.000
66	HCV 1b	14	11	10	B_3501	RPYSpSSERL	40.000
67	HCV 1b	15	19	9	A_0201	RLLPRQRRL	15.808
68	HCV 1b	15	12	9	A24	PYSPSSERL	24.000
69	HCV 1b	15	19	9	A24	RLLPRQRRL	14.400
70	HCV 1b	15	12	10	A24	PYSPsSERLL	24.000
71	HCV 1b	15	11	10	B7	RPYSpSSERL	80.000
72	HCV 1b	15	5	9	B_3501	RSLSQSRPY	20.000
73	HCV 1b	15	11	10	B_3501	RPYSpSSERL	40.000
74	HCV 1b	16	3	9	B7	AVRPGGMS	15.000
75	HCV 1b	17		7		no hits	
76	HCV 1b	18	21	10	A_0201	SLGPwHKLvV	28.516
77	HCV 1b	18	27	10	A_0201	KLvVvKPARA	17.388
78	HCV 1b	18	6	10	A24	RVPDlQKPRL	14.400
79	HCV 1b	18	27	9	A3	KLvVvKPAR	27.000
80	HCV 1b	18	47	9	B7	MPPQGPACL	80.000
81	HCV 1b	18	14	9	B7	RLRTMQPSL	40.000
82	HCV 1b	18	2	9	B7	VTRSRVPDL	40.000
83	HCV 1b	18	7	9	B7	VPDLQKPRL	24.000
84	HCV 1b	18	19	10	B7	QPSLgPWHKL	120.000
85	HCV 1b	18	1	10	B7	MVTRsRVPDL	20.000
86	HCV 1b	18	6	10	B7	RVPDlQKPRL	20.000
87	HCV 1b	18	2	9	B8	VTRSRVPDL	80.000
88	HCV 1b	18	19	10	B_3501	QPSLgPWHKL	20.000
89	HCV 1b	18	32	10	B_3501	KPARaGATAI	16.000
90	HCV 1b	18	12	10	B_3501	KPRLrTMQPS	12.000
91	HCV 1b	19		7		no hits	
92	HCV 1b	20	7	10	B7	RTRGsGCWRL	40.000
93	HCV 1b	20	24	9	B8	CARQRQQRV	48.000
94	HCV 1b	21	8	9	A1	VLEAARHSY	45.000
95	HCV 1b	21	2	10	A_0201	ALPGgGVLEA	11.426
96	HCV 1b	21	1	9	B7	MALPGGGVL	12.000
97	HCV 1b	22	14	10	B7	NQRGrARDRL	60.000
98	HCV 1b	23	3	10	A_0201	MLPSqELTGV	271.948
99	HCV 1b	23	1	9	A_0201	MI MLPSQEL	18.476
100	HCV 1b	23	2	9	A_0201	IMLPSQELT	16.588

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101	HCV 1b	23	1	9	B7	MIMLPSQEL	18.000
102	HCV 1b	23	7	10	B_4403	QELTgVCLAV	12.000
103	HCV 1b	23	7	9	B_4403	QELTGVCCLA	24.000
104	HCV 1b	24		7		no hits	
105	HCV 1b	25	6	10	A1	TVESkQRVSY	90.000
106	HCV 1b	25	19	9	A_0201	MGFFFDQV	62.942
107	HCV 1b	25	18	10	A_0201	PMGFFFDQV	24.356
108	HCV 1b	25	14	9	A24	SYEKPMGFF	150.000
109	HCV 1b	25	20	9	A24	GFFFDQVF	14.400
110	HCV 1b	25	14	10	A24	SYEKPMGFF	150.000
111	HCV 1b	25	38	10	A24	EYWNpYEEPI	50.000
112	HCV 1b	25	10	10	B7	KQRVsYEKPM	10.000
113	HCV 1b	25	10	10	B_3501	KQRVsYEKPM	12.000
114	HCV 1b	25	13	10	B_3501	VSYEKPMGFF	10.000
115	HCV 1b	25	35	9	B_3501	CPGEYWNPY	80.000
116	HCV 1b	25	17	9	B_3501	KPMGFFDF	40.000
117	HCV 1b	25	13	9	B_3501	VSYEKPMGF	10.000
118	HCV 1b	25	31	9	B_3501	NSTRCPGEY	10.000
119	HCV 1b	25	15	9	B_4403	YEKPMGFFF	120.000
120	HCV 1b	25	7	9	B_4403	VESKQRVSY	120.000
121	HCV 1b	26	17	9	A1	HTeWMMWLTA	11.250
122	HCV 1b	26	1	10	A_0201	MMVVSIGVTV	85.394
123	HCV 1b	26	26	10	A_0201	LLDRfRTSFA	18.580
124	HCV 1b	26	14	10	A_0201	KSFHtEWMWL	16.885
125	HCV 1b	26	2	9	A_0201	MVVSIGVTV	10.346
126	HCV 1b	26	15	9	A24	SFHTeWMMWL	20.000
127	HCV 1b	26	20	10	A3	WMWLtALLDR	60.000
128	HCV 1b	26	12	10	B_3501	SSKSfHTEWM	30.000
129	HCV 1b	26	14	10	B_3501	KSFHtEWMWL	15.000
130	HCV 1b	27	16	10	A_0201	SLLSsAAHGV	257.342
131	HCV 1b	27	1	10	A_0201	MLWWrSKELL	147.697
132	HCV 1b	27	12	10	A_0201	ALMGsLLSSA	42.278
133	HCV 1b	27	9	10	A_0201	LLNALMGSL	36.316
134	HCV 1b	27	5	9	A24	RSKELLNAL	13.824
135	HCV 1b	27	5	9	B_3501	RSKELLNAL	60.000
136	HCV 1b	27	5	10	B_3501	RSKELLNALM	120.000
137	HCV 1b	27	7	10	B_4403	KELLnALMGS	18.000
138	HCV 1b	28	29	9	A1	TADDSELPK	50.000
139	HCV 1b	28	7	9	A1	TSDELSPSS	15.000
140	HCV 1b	28	3	9	A24	EYDSTSDPL	200.000
141	HCV 1b	28	61	9	A24	RGGGIGGAL	11.200
142	HCV 1b	28	52	9	B7	SVRTTVLFL	200.000
143	HCV 1b	28	19	9	B7	SGRAVAVPL	40.000
144	HCV 1b	28	9	10	B_3501	DPLSpSSEAW	10.000
145	HCV 1b	28	33	10	B_4403	SELPkVLVAS	72.000
146	HCV 1b	28	15	10	B_4403	SEAWsGRAVA	16.000
147	HCV 1b	28	33	9	B_4403	SELPKVLVA	144.000
148	HCV 1b	28	15	9	B_4403	SEAWSGRAV	16.000
149	HCV 1b	29	40	9	A1	FSDSTRVMF	15.000
150	HCV 1b	29	92	9	A1	GGDPLANLR	12.500
151	HCV 1b	29	128	9	A1	SCDPTRYWL	10.000
152	HCV 1b	29	62	10	A_0201	RSASgETWWV	18.728

153	HCV 1b	29	38	9	A_0201	TLFSDSTRV	257.342
154	HCV 1b	29	106	9	A_0201	VMWEGSVSM	207.569
155	HCV 1b	29	63	9	A_0201	SASGETWWV	39.848
156	HCV 1b	29	177	9	A_0201	FTLSVVMV	37.815
157	HCV 1b	29	155	9	A_0201	YLCNRTPST	34.279
158	HCV 1b	29	135	9	A_0201	WLSPTWNV	23.893
159	HCV 1b	29	171	9	A_0201	GTWHGHFTL	14.283
160	HCV 1b	29	98	9	A_0201	NLRLaVSAV	12.158
161	HCV 1b	29	148	9	A24	RGLHAGAYL	12.000
162	HCV 1b	29	133	9	A24	RYWLSPTWN	10.000
163	HCV 1b	29	75	10	A24	AFKEGADNWL	28.800
164	HCV 1b	29	39	10	A24	LFSdSTRVMF	12.000
165	HCV 1b	29	133	10	A24	RYWLSPTWNV	10.000
166	HCV 1b	29	46	9	A3	VMFPPISCR	67.500
167	HCV 1b	29	88	9	B7	LAKEGGDPL	12.000
168	HCV 1b	29	105	10	B7	AVMWeGSVSM	45.000
169	HCV 1b	29	141	10	B7	NVTSSRRRGL	30.000
170	HCV 1b	29	170	10	B7	AGTWGHFTL	12.000
171	HCV 1b	29	52	10	B7	SCRHrRLASM	10.000
172	HCV 1b	29	98	10	B7	NLRLaVSAVM	10.000
173	HCV 1b	29	30	10	B8	GSKEsRTTTL	120.000
174	HCV 1b	29	52	10	B8	SCRHrRLASM	80.000
175	HCV 1b	29	88	9	B8	LAKEGGDPL	24.000
176	HCV 1b	29	88	9	B_3501	LAKEGGDPL	18.000
177	HCV 1b	29	30	10	B_3501	GSKEsRTTTL	30.000
178	HCV 1b	29	127	10	B_3501	GSCDpTRYWL	10.000
179	HCV 1b	29	164	10	B_4403	SEKNsGAGTW	36.000
180	HCV 1b	29	114	10	B_4403	MEVStatSGS	18.000
181	HCV 1b	29	66	10	B_4403	GETWwVVHVA	18.000
182	HCV 1b	29	32	9	B_4403	KESRTTTLF	90.000
183	HCV 1b	29	66	9	B_4403	GETWwVVHV	12.000
184	HCV 1b	30	64	9	A1	SLDWSQVLK	20.000
185	HCV 1b	30	84	10	A_0201	SLShEPHGV	69.552
186	HCV 1b	30	8	10	A_0201	VLLQVLGPTI	65.622
187	HCV 1b	30	38	10	A_0201	MMPSpRQTPL	26.228
188	HCV 1b	30	68	10	A_0201	SQVLkSVNTV	16.219
189	HCV 1b	30	9	10	A_0201	LLQVLGPTIL	14.890
190	HCV 1b	30	3	10	A_0201	NVPChVLLQV	13.997
191	HCV 1b	30	17	9	A_0201	ILMEPFLTC	243.428
192	HCV 1b	30	22	9	A_0201	FLTCPVICA	52.561
193	HCV 1b	30	69	9	A_0201	QVLKSVNTV	51.790
194	HCV 1b	30	16	9	A_0201	TILMEPFLT	21.989
195	HCV 1b	30	9	9	A_0201	LLQVLGPTI	17.736
196	HCV 1b	30	8	9	A_0201	VLLQVLGPT	14.015
197	HCV 1b	30	63	9	A24	RLDWSQVL	17.280
198	HCV 1b	30	46	10	A3	PLYPrWHEKK	45.000
199	HCV 1b	30	64	9	A3	SLDWSQVLK	20.000
200	HCV 1b	30	46	9	A3	PLYPRWHEK	15.000
201	HCV 1b	30	39	9	B7	MPSPRQTPL	80.000
202	HCV 1b	30	57	9	B7	TPGSCGRSL	80.000
203	HCV 1b	30	30	9	B7	APHGQVVC	60.000
204	HCV 1b	30	4	10	B7	VPChvLLQVL	80.000

205	HCV 1b	30	14	10	B7	GPTILMEPFL	80.000
206	HCV 1b	30	30	10	B7	APHGqVVCMM	60.000
207	HCV 1b	30	76	10	B7	TVHIqSQTSL	20.000
208	HCV 1b	30	48	10	B7	YPRWheKKGT	20.000
209	HCV 1b	30	39	9	B8	MPSPRQTPL	16.000
210	HCV 1b	30	30	9	B_3501	APHGQVVCMM	40.000
211	HCV 1b	30	14	9	B_3501	GPTILMEPF	20.000
212	HCV 1b	30	39	9	B_3501	MPSPRQTPL	20.000
213	HCV 1b	30	57	9	B_3501	TPGSCGRSL	20.000
214	HCV 1b	30	63	9	B_3501	RSLDWSQVL	20.000
215	HCV 1b	30	39	10	B_3501	MPSPrQTPLY	40.000
216	HCV 1b	30	30	10	B_3501	APHGqVVCMM	40.000
217	HCV 1b	30	14	10	B_3501	GPTILMEPFL	20.000
218	HCV 1b	30	4	10	B_3501	VPCHvLLQVL	20.000
219	HCV 1b	30	87	10	B_4403	HEPEhGVEQS	12.000
220	HCV 1b	30	93	10	B_4403	VEQSSLIHWW	12.000
221	HCV 1b	30	93	9	B_4403	VEQSSLIHW	18.000
222	HCV 1b	31	5	10	A_0201	RLTRsSVEGI	11.758
223	HCV 1b	31	13	9	A3	GISPLMTLK	13.500
224	HCV 1b	31	9	10	B_3501	SSVEgISPLM	20.000
225	HCV 1b	31	8	10	B_3501	RSSVEGISPL	10.000
226	HCV 1b	32	35	10	A1	ATHPPKMLNR	12.500
227	HCV 1b	32	40	10	A_0201	KMLNrRVLWV	8.228.881
228	HCV 1b	32	41	10	A_0201	MLNRrVLWVV	836.241
229	HCV 1b	32	46	10	A_0201	VLWVvSGLVI	60.355
230	HCV 1b	32	52	10	A_0201	GLVTeAVNAI	23.995
231	HCV 1b	32	27	10	A_0201	ALGGaSWAAT	12.668
232	HCV 1b	32	49	10	A_0201	VVSGlVIEAV	11.660
233	HCV 1b	32	77	9	A24	KYCIPLMKF	220.000
234	HCV 1b	32	45	9	A24	RVLWVVSGL	16.800
235	HCV 1b	32	20	9	B7	APTKAEaAL	240.000
236	HCV 1b	32	74	9	B7	KPAKYCIPL	80.000
237	HCV 1b	32	34	9	B7	AATHPPKML	54.000
238	HCV 1b	32	45	9	B7	RVLWVVSGL	20.000
239	HCV 1b	32	6	9	B7	FPRPMLPTA	20.000
240	HCV 1b	32	74	10	B7	KPAKYCIPLM	20.000
241	HCV 1b	32	6	10	B7	FPRPmLPTAA	20.000
242	HCV 1b	32	33	10	B7	WAAThPPKML	18.000
243	HCV 1b	32	90	10	B7	AQNVsRARHL	12.000
244	HCV 1b	32	38	10	B7	PPKMLNRRVL	12.000
245	HCV 1b	32	74	10	B_3501	KPAKYCIPLM	80.000
246	HCV 1b	32	80	10	B_3501	IPLMkFHMCF	20.000
247	HCV 1b	32	125	10	B_3501	CSAScIPCSM	10.000
248	HCV 1b	32	1	10	B_3501	MSTStFPRPM	10.000
249	HCV 1b	32	74	9	B_3501	KPAKYCIPL	40.000
250	HCV 1b	32	20	9	B_3501	APTKAEaAL	20.000
251	HCV 1b	32	24	9	B_4403	AEaALGGAS	16.000
252	HCV 1b	32	24	10	B_4403	AEaALGGASW	48.000
253	HCV 1b	32	55	10	B_4403	IEAVnAINDA	12.000
254	HCV 1b	33	31	9	A1	SADMHAMMY	125.000
255	HCV 1b	33	2	9	A1	TTLFVVRQY	12.500
256	HCV 1b	33	51	9	A1	WTAPSLYSK	10.000

257	HCV 1b	33	36	10	A_0201	AMMY1VMGWV	305.644
258	HCV 1b	33	39	9	A_0201	YLVMGWVRV	543.897
259	HCV 1b	33	37	9	A_0201	MMYLVMGWV	449.379
260	HCV 1b	33	3	9	A_0201	TLPVVRQYA	27.324
261	HCV 1b	33	16	10	A24	RTPPtSTQVL	17.280
262	HCV 1b	33	37	10	A3	MMYLvMGWVR	60.000
263	HCV 1b	33	17	9	B7	TPPTSTQVL	80.000
264	HCV 1b	33	14	9	B7	AARTPPTST	13.500
265	HCV 1b	33	53	9	B7	APSLYSKGV	12.000
266	HCV 1b	33	62	10	B7	GPCSvGFSRM	20.000
267	HCV 1b	33	28	10	B7	TSRSaDMHAM	10.000
268	HCV 1b	33	68	9	B8	FSRMRHFPHI	20.000
269	HCV 1b	33	11	10	B8	AARAAATPPT	16.000
270	HCV 1b	33	28	10	B_3501	TSRSaDMHAM	45.000
271	HCV 1b	33	30	10	B_3501	RSADmHAMMY	40.000
272	HCV 1b	33	62	10	B_3501	GPCSvGFSRM	40.000
273	HCV 1b	33	48	10	B_3501	TSFWtAPSLY	10.000
274	HCV 1b	33	30	9	B_3501	RSADMHAMM	40.000
275	HCV 1b	33	17	9	B_3501	TPPTSTQVL	20.000
276	HCV 1b	33	2	9	B_4403	TTLPVVRQY	54.000
277	HCV 1b	33	1	10	B_4403	MTTLpVVRQY	13.500
278	HCV 1b	34	15	10	A_0201	WSWQtGNPGV	17.334
279	HCV 1b	35	3	10	B7	EGRSpGVITNL	40.000
280	HCV 1b	36	3	9	A3	LLPLPVLPR	36.000
281	HCV 1b	36	9	10	B7	LPRRCERDTA	30.000
282	HCV 1b	36	1	9	B7	MPLLPPLPVL	120.000
283	HCV 1b	36	9	9	B7	LPRRCERDT	20.000
284	HCV 1b	36	1	9	B_3501	MPLLPPLPVL	20.000
285	HCV 1b	37	3	10	A_0201	KVGSKLKSTV	21.300
286	HCV 1b	37	20	9	A_0201	SITESKSPV	39.210
287	HCV 1b	37	9	10	A24	KSTVwVTHVL	11.200
288	HCV 1b	37	17	9	A3	VLQSITESK	30.000
289	HCV 1b	37	9	10	B_3501	KSTVwVTHVL	10.000
290	HCV 1b	38				no hits	
291	HCV 1b	39	7	9	A_0201	LMASMGMAI	26.228
292	HCV 1b	39	3	9	A_0201	CLPPLMASM	11.426
293	HCV 1b	39	4	10	B7	LPPLmASMGM	20.000
294	HCV 1b	39	4	10	B_3501	LPPLmASMGM	40.000
295	HCV 1b	40	7	9	A1	VTDPGGVAV	25.000
296	HCV 1b	40	7	10	A1	VTDPgGVAVA	25.000
297	HCV 1b	40	6	10	A_0201	TVTDPGGVAV	24.952
298	HCV 1b	40	34	9	B_3501	MPKIVVESV	12.000
299	HCV 1b	40	25	10	B_3501	VSAWsRTVPM	10.000
300	HCV 1b	41	15	10	A1	ALDIyAPNPK	10.000
301	HCV 1b	41	7	10	A_0201	LMLGsIPCAL	97.045
302	HCV 1b	41	6	10	A_0201	VLMLgSIPCA	71.872
303	HCV 1b	41	35	10	A_0201	TLYPwAAYAA	15.898
304	HCV 1b	41	35	9	A_0201	TLYPWAAYA	87.437
305	HCV 1b	41	46	9	A_0201	TLVLLPLPV	69.552
306	HCV 1b	41	7	9	A_0201	LMLGsIPCA	51.908
307	HCV 1b	41	8	9	A_0201	MLGSIPCAL	36.316
308	HCV 1b	41	48	9	A_0201	VLLPLPVGA	31.249



309	HCV 1b	41	6	9	A_0201	VLMGSIIPC	31.249
310	HCV 1b	41	1	9	A_0201	MVLTPVLML	27.042
311	HCV 1b	41	41	9	A24	AYAAGTLVL	200.000
312	HCV 1b	41	41	10	A24	AYAAGTLVLL	200.000
313	HCV 1b	41	15	10	A3	ALDIYAPNPK	20.000
314	HCV 1b	41	1	9	B7	MVLTPVLML	30.000
315	HCV 1b	41	42	9	B7	YAAGTLVLL	12.000
316	HCV 1b	41	44	9	B7	AGTLVLLPL	12.000
317	HCV 1b	41	39	9	B7	WAAYAAGTL	12.000
318	HCV 1b	41	22	10	B8	NPKVaATDGL	16.000
319	HCV 1b	41	22	10	B_3501	NPKVaATDGL	60.000
320	HCV 1b	41	50	10	B_3501	LPLPvGACRW	10.000
321	HCV 1b	41	10	10	B_3501	GSIPCALDIY	10.000
322	HCV 1b	41	33	10	B_3501	TSTLYPWAAY	10.000
323	HCV 1b	41	10	10	B_4403	GSIPCALDIY	67.500
324	HCV 1b	41	28	10	B_4403	TDGLrTSTLY	22.500
325	HCV 1b	41	29	9	B_4403	DGLRTSTLY	27.000
326	HCV 1b	41	34	9	B_4403	STLYPWAAY	12.000
327	HCV 1b	42	2	10	B_4403	DSTGTkSTAF	10.125
328	HCV 1b	43				no hits	
329	HCV 1b	44	1	9	A_0201	MMQPSRPRV	85.394
330	HCV 1b	44	3	9	B_3501	QPSRPRVCW	10.000
331	HCV 1b	45	32	9	A_0201	KMMSPHAAV	650.504
332	HCV 1b	45	16	9	B7	GPRsISFPL	800.000
333	HCV 1b	45	71	9	B7	QSRSGVRWL	40.000
334	HCV 1b	45	7	9	B7	HPRPSRLSA	30.000
335	HCV 1b	45	16	9	B8	GPRsISFPL	16.000
336	HCV 1b	45	16	9	B_3501	GPRsISFPL	60.000
337	HCV 1b	45	71	9	B_3501	QSRSGVRWL	15.000
338	HCV 1b	45	30	9	B_3501	RPKMMSPHA	12.000
339	HCV 1b	45	26	9	B_4403	AETGRPKMM	18.000
340	HCV 1b	45	47	10	A_0201	ILVSmSEKTT	12.668
341	HCV 1b	45	45	10	A3	VMILvSMSEK	45.000
342	HCV 1b	45	39	10	B7	AVSApQVMIL	60.000
343	HCV 1b	45	42	10	B7	APQVmILVSM	60.000
344	HCV 1b	45	4	10	B7	RSRHpRPSRL	40.000
345	HCV 1b	45	70	10	B7	AQSRsGVRWL	12.000
346	HCV 1b	45	15	10	B7	AGPRsISFPL	12.000
347	HCV 1b	45	4	10	B8	RSRHpRPSRL	40.000
348	HCV 1b	45	61	10	B8	TARsRPAAW	16.000
349	HCV 1b	45	42	10	B_3501	APQVmILVSM	40.000
350	HCV 1b	45	4	10	B_3501	RSRHpRPSRL	30.000
351	HCV 1b	45	30	10	B_3501	RPKMMSPHAA	12.000
352	HCV 1b	45	26	10	B_4403	AETGrPKMMS	12.000
353	HCV 1b	45	52	10	B_4403	SEKtTGSTAT	12.000
354	HCV 1b	46	1	9	A24	MYVPVSAPS	12.600
355	HCV 1b	46	3	9	B7	VPVSAPSFM	20.000
356	HCV 1b	46	3	9	B_3501	VPVSAPSFM	40.000
357	HCV 1b	46	7	9	B_3501	APsFMKAIW	10.000
358	HCV 1b	46	2	10	A_0201	YVPVsAPSFM	10.998
359	HCV 1b	46	1	10	A24	MYVPvSAPSF	180.000
360	HCV 1b	47	58	9	A24	KYCNHhMSL	400.000

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361	HCV 1b	47	9	9	B7	GPSMASRSL	80.000
362	HCV 1b	47	34	9	B7	MASRPRTL	18.000
363	HCV 1b	47	9	9	B_3501	GPSMASRSL	20.000
364	HCV 1b	47	4	9	B_3501	WSTMSGPSM	10.000
365	HCV 1b	47	51	9	B_4403	CASALVIKY	13.500
366	HCV 1b	47	21	10	A_0201	KISSgWTAHV	33.472
367	HCV 1b	47	32	10	A_0201	RMMAsRPRTL	19.913
368	HCV 1b	47	58	10	A24	KYCNhHMSLA	10.000
369	HCV 1b	47	41	10	A3	TLRGgTHTCK	30.000
370	HCV 1b	47	13	10	B7	ASRS1VMSKI	12.000
371	HCV 1b	47	50	10	B_4403	KCASaLVIKY	27.000
372	HCV 1b	48	70	9	A1	TTDPTFYRY	1.250.000
373	HCV 1b	48	23	9	A3	ALRTTRFSK	60.000
374	HCV 1b	48	16	9	B7	CAPATDAAL	12.000
375	HCV 1b	48	56	9	B_3501	KSSRTYSHL	10.000
376	HCV 1b	48	21	9	B_4403	DAALRTTRF	13.500
377	HCV 1b	48	70	10	A1	TTDPtPYRYC	12.500
378	HCV 1b	48	19	10	A1	ATDAaLRTTR	12.500
379	HCV 1b	48	23	10	A_0201	ALRTtRFSKV	10.043
380	HCV 1b	48	75	10	A24	PYRYcTSTIF	10.000
381	HCV 1b	48	23	10	B8	ALRTtRFSKV	24.000
382	HCV 1b	48	51	10	B8	SARRrKSSRT	16.000
383	HCV 1b	48	67	10	B_4403	TETtDPTPY	180.000
384	HCV 1b	48	20	10	B_4403	TDAALRTTRF	22.500
385	HCV 1b	49				no hits	
386	HCV 1b	50	30	9	A_0201	VLLSSSTSV	437.482
387	HCV 1b	50	9	9	A_0201	VLVNPVLFt	224.357
388	HCV 1b	50	1	9	A_0201	MLHGgPPHV	118.238
389	HCV 1b	50	38	9	A_0201	VSFSPQLYV	15.707
390	HCV 1b	50	16	9	A_0201	FIHVQPnQL	13.512
391	HCV 1b	50	43	9	A3	QLYVGTPER	20.000
392	HCV 1b	50	24	9	B7	LPCGGRVLL	120.000
393	HCV 1b	50	52	9	B7	SVVPTTTGL	20.000
394	HCV 1b	50	24	9	B_3501	LPCGGRVLL	20.000
395	HCV 1b	50	57	9	B_4403	TTGLGVKQY	13.500
396	HCV 1b	50	37	10	A_0201	SVSFsPQLYV	33.472
397	HCV 1b	50	29	10	A_0201	RVLLsSSTSV	22.517
398	HCV 1b	50	23	10	A_0201	QLPCgGRVLL	21.362
399	HCV 1b	50	10	10	A_0201	LVNPvLFIHV	19.657
400	HCV 1b	50	1	10	A_0201	MLHGgPPHVL	14.890
401	HCV 1b	50	45	10	A_0201	YVGTPERSVV	11.478
402	HCV 1b	50	53	10	A_0201	VVPTtTGLGV	10.346
403	HCV 1b	50	15	10	A24	LFIHvQPnQL	36.000
404	HCV 1b	50	51	10	A24	RSVVPtTTGL	12.000
405	HCV 1b	50	67	10	B_3501	GPHTCDAGTI	12.000
406	HCV 1b	50	51	10	B_3501	RSVVPtTTGL	10.000
407	HCV 1b	50	36	10	B_3501	TSVSfSPQLY	10.000
408	HCV 1b	50	56	10	B_4403	TTTGLGVKQY	20.250
409	HCV 1b	51	6	10	B7	AMRSgHPDAL	120.000
410	HCV 1b	51	8	10	B_3501	RSGHpDALNL	15.000
411	HCV 1b	52	15	9	A_0201	LLMCQLPLV	1.006.209
412	HCV 1b	52	14	9	A_0201	VLLMCQLPL	134.369

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413	HCV 1b	52	8	9	A_0201	SLQFRAVLL	21.362
414	HCV 1b	52	12	9	A24	RAVLLMCQL	14.400
415	HCV 1b	52	12	9	B7	RAVLLMCQL	12.000
416	HCV 1b	52	14	10	A_0201	VLLMcQLPLV	1.006.209
417	HCV 1b	52	19	10	A_0201	QLPLvFTSWI	218.046
418	HCV 1b	52	16	10	A_0201	LMCQLPLVFT	115.740
419	HCV 1b	52	8	10	A_0201	SLQFrAVLLM	11.426
420	HCV 1b	52	13	10	B7	AVLLmCQLPL	60.000
421	HCV 1b	52	2	10	B_3501	NPVWreSLQF	30.000
422	HCV 1b	52	20	10	B_3501	LPLVfTSWIF	20.000
423	HCV 1b	53				no hits	
424	HCV 1b	54	1	9	A_0201	MLLFLAASV	437.482
425	HCV 1b	54	19	9	A_0201	KLLSRTQGT	96.503
426	HCV 1b	54	42	9	A_0201	ILELEQSFV	41.620
427	HCV 1b	54	33	9	A_0201	MIMSAASYT	35.448
428	HCV 1b	54	34	9	A_0201	IMSAASYTI	12.809
429	HCV 1b	54	37	9	B7	AASYTILEL	36.000
430	HCV 1b	54	12	9	B7	SATQQREKL	18.000
431	HCV 1b	54	13	9	B7	ATQQREKLL	12.000
432	HCV 1b	54	45	9	B_4403	LEQSFVTWY	540.000
433	HCV 1b	54	43	9	B_4403	LELEQSFVT	12.000
434	HCV 1b	54	44	10	A1	ELEQsFVTWY	45.000
435	HCV 1b	54	41	10	A_0201	TILELEQSFV	797.922
436	HCV 1b	54	2	10	A_0201	LLFLaASVGv	437.482
437	HCV 1b	54	32	10	A_0201	CMIMsAASYT	29.601
438	HCV 1b	54	4	10	A_0201	FLAAsVGvSA	22.853
439	HCV 1b	54	34	10	A_0201	IMSAaSYTIL	16.130
440	HCV 1b	54	45	10	A_0201	LEQsfVTWYI	14.226
441	HCV 1b	54	44	10	A3	ELEQsFVTWY	10.800
442	HCV 1b	54	49	10	B7	FVTWYIPDTL	20.000
443	HCV 1b	54	12	10	B7	SATQqREKLL	12.000
444	HCV 1b	54	36	10	B7	SAASyTILEL	12.000
445	HCV 1b	54	12	10	B8	SATQqREKLL	16.000
446	HCV 1b	54	43	10	B_4403	LELEqSFVTW	24.000
447	HCV 1b	54	31	10	B_4403	VCMImsAASy	13.500
448	HCV 1b	55	14	9	A_0201	KEQPGRFPV	27.454
449	HCV 1b	55	12	9	B_4403	IEKEQPGRF	40.000
450	HCV 1b	55	14	9	B_4403	KEQPGRFPV	12.000
451	HCV 1b	56	42	9	B7	HPAHPIPSL	120.000
452	HCV 1b	56	12	9	B7	RVSMTLpKL	20.000
453	HCV 1b	56	42	9	B_3501	HPAHPIPSL	20.000
454	HCV 1b	56	8	10	A24	KPHVrVSMTL	11.200
455	HCV 1b	56	8	10	B7	KPHVrVSMTL	80.000
456	HCV 1b	56	35	10	B7	EPRGdRSHPA	20.000
457	HCV 1b	56	2	10	B7	YPMRsAKPHV	12.000
458	HCV 1b	56	35	10	B8	EPRGdRSHPA	32.000
459	HCV 1b	56	19	10	B8	KLRDlRRGSV	18.000
460	HCV 1b	56	8	10	B_3501	KPHVrVSMTL	40.000
461	HCV 1b	56	6	10	B_3501	SAKPhVRVSM	18.000
462	HCV 1b	57	15	9	A24	PYQAVPQGL	50.400
463	HCV 1b	57	22	9	A3	GLSRPNtTR	18.000
464	HCV 1b	57	23	9	B7	LSRPNTTRL	40.000

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465	HCV 1b	57	8	9	B_3501	LPGHSQAPY	40.000
466	HCV 1b	57	23	9	B_3501	LSRPNTTRL	15.000
467	HCV 1b	57	22	10	A_0201	GLSRpNTTRL	21.362
468	HCV 1b	57	14	10	B7	APYQaVPQGL	240.000
469	HCV 1b	57	14	10	B_3501	APYQaVPQGL	20.000
470	HCV 1b	58	63	9	A1	QVDAYPYRK	20.000
471	HCV 1b	58	2	9	A_0201	RLTDLSQLA	20.369
472	HCV 1b	58	46	9	A24	KWPIGLECL	12.000
473	HCV 1b	58	63	9	A3	QVDAYPYRK	18.000
474	HCV 1b	58	43	9	B7	KNRKWPIGL	40.000
475	HCV 1b	58	61	9	B_4403	GEQVDAYPY	180.000
476	HCV 1b	58	60	10	A1	VGEQvDAYPY	22.500
477	HCV 1b	58	2	10	A_0201	RLTDLSQLAV	285.163
478	HCV 1b	58	55	10	B7	APRSsVGEQV	120.000
479	HCV 1b	58	11	10	B7	VTRAKMEPPL	40.000
480	HCV 1b	58	55	10	B_3501	APRSsVGEQV	12.000
481	HCV 1b	58	58	10	B_3501	SSVGeQVDAY	10.000
482	HCV 1b	58	58	10	B_4403	SSVGeQVDAY	54.000
483	HCV 1b	59	1	9	B_3501	MSPDSQGWY	20.000
484	HCV 1b	60				no hits	
485	HCV 1b	61	2	9	B7	WGRQLAGFL	40.000
486	HCV 1b	62	7	9	B7	VAQRVDGQL	12.000
487	HCV 1b	62	10	10	A1	RVDGqLAFLR	25.000
488	HCV 1b	62	6	10	A24	RVAQrVDGQL	11.200
489	HCV 1b	62	6	10	B7	RVAQrVDGQL	20.000
490	HCV 1b	63	7	9	A24	RLQGRRRQL	12.000
491	HCV 1b	64	16	9	B7	TVFDMSGDL	20.000
492	HCV 1b	64	12	9	B7	DPHGTVFDM	20.000
493	HCV 1b	64	34	9	B7	DAVSPPDSL	18.000
494	HCV 1b	64	12	9	B_3501	DPHGTVFDM	40.000
495	HCV 1b	64	37	10	B7	SPPDsLVPAL	80.000
496	HCV 1b	64	37	10	B_3501	SPPDsLVPAL	40.000
497	HCV 1b	64	9	10	B_3501	RPDDpHGTVF	24.000
498	HCV 1b	65	53	9	B7	KPRSSRLRL	1.200.000
499	HCV 1b	65	53	9	B_3501	KPRSSRLRL	120.000
500	HCV 1b	65	28	10	A_0201	RQGHLLDVVV	38.785
501	HCV 1b	65	53	10	B7	KPRSsRLRLV	40.000
502	HCV 1b	65	53	10	B8	KPRSsRLRLV	24.000
503	HCV 1b	65	23	10	B8	DLSSiRQGHL	16.000
504	HCV 1b	65	53	10	B_3501	KPRSsRLRLV	24.000
505	HCV 1b	65	4	10	B_4403	NEMPsPPDGF	160.000
506	HCV 1b	66	42	9	B7	DVGvNTVCL	20.000
507	HCV 1b	66	14	9	B7	RATTIGKKL	12.000
508	HCV 1b	67				no hits	
509	HCV 1b	68	25	9	A_0201	NLSLDLVLV	159.970
510	HCV 1b	68	16	9	A_0201	GLCCGGNHL	21.362
511	HCV 1b	68	1	9	A_0201	MVNGPTHAV	10.346
512	HCV 1b	68	29	9	A3	DLVLVPACK	13.500
513	HCV 1b	68	8	10	B7	AVDAgRQEGL	18.000
514	HCV 1b	69	12	9	A_0201	QLHEGHLDI	42.774
515	HCV 1b	69	10	9	A24	RAQLHEGHL	12.000
516	HCV 1b	69	10	9	B7	RAQLHEGHL	12.000

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517	HCV 1b	69	4	10	B7	NVRACQRAQL	300.000
518	HCV 1b	70	18	9	B_4403	LEHHHERTEY	180.000
519	HCV 1b	70	17	10	A1	SLEHHERTEY	45.000
520	HCV 1b	70	9	10	B7	EVRHsGYASL	200.000
521	HCV 1b	70	6	10	B_3501	SAHEvRHSGY	12.000
522	HCV 1b	71	19	9	A1	RGDPHLQVR	12.500
523	HCV 1b	71	19	10	A24	RGDPHLQVRL	11.520
524	HCV 1b	71	25	10	B7	QVRLgPGDKI	30.000
525	HCV 1b	72				no hits	
526	HCV 1b	73				no hits	
527	HCV 1b	74	2	9	A24	VYPGHVAHL	300.000
528	HCV 1b	74	1	10	A_0201	MVYPghVAHL	23.388
529	HCV 1b	74	2	10	A24	VYPGHVAHLV	10.500
530	HCV 1b	74	1	10	B7	MVYPghVAHL	20.000
531	HCV 1b	75				no hits	

Table 4e  
2a (1-3)

No.	Strain	ORF	Start	AA	HLA	Peptide sequence	Score
1	2a	1	2	9	B3501	TPGIGRVTW	10
2	2a	2	40	9	A0201	QMWLCSSAA	29,78
3	2a	2	35	9	A24	GYRSHQMWL	200
4	2a	2	3	10	B3501	VPMTASPGSF	20
5	2a	2	19	10	B3501	SPGASRAREW	10
6	2a	2	34	10	B7	AGYRSHQMWL	12
7	2a	2	22	9	B7	ASRAREWEI	12
8	2a	2	22	9	B8	ASRAREWEI	20
9	2a	4	16	10	A0201	ILTPLTNSNV	48,478
10	2a	4	15	10	A0201	SILTPLTSNV	35,385
11	2a	4	11	10	A0201	TVLGSILTPL	15,907
12	2a	4	12	10	A0201	VLGSILTFLT	12,668
13	2a	4	16	9	A0201	ILTPLTSNV	118,238
14	2a	4	12	9	A0201	VLGSILTPL	83,527
15	2a	4	5	9	A24	TFCAPRTVL	20
16	2a	4	8	10	B3501	APRTVLGSIL	60
17	2a	4	8	9	B3501	APRTVLGSI	24
18	2a	4	18	9	B3501	TPLTSNVVL	20
19	2a	4	27	9	B3501	GPGSRRGAW	10
20	2a	4	8	10	B7	APRTVLGSIL	2400
21	2a	4	11	10	B7	TVLGSILTPL	20
22	2a	4	8	9	B7	APRTVLGSI	240
23	2a	4	18	9	B7	TPLTSNVVL	80
24	2a	4	8	10	B8	APRTVLGSIL	16
25	2a	4	6	8	B8	FCAPRTVL	16
26	2a	5	5	8	B3501	LPLQNMSF	20
27	2a	6	4	10	A0201	YILSSFSWLL	1424,811
28	2a	6	9	10	A0201	FSWLLGTSKV	17,334
29	2a	6	5	9	A0201	ILSSFSWLL	1035,008
30	2a	6	4	9	A0201	YILSSFSWL	522,431
31	2a	6	44	9	A0201	RLMPMMHLC	42,278
32	2a	5	44	10	A1	RLMPMMHLCK	10
33	2a	5	3	10	A24	SYILSSFSWL	360
34	2a	6	45	9	A3	LMPMMHLCK	40
35	2a	6	37	10	B3501	CSSHCPNRLM	10
36	2a	6	41	8	B3501	CPNRLMPM	40
37	2a	6	23	9	B3501	WPPIPSPAY	40
38	2a	6	28	9	B3501	SPAYGPFAY	40
39	2a	6	41	9	B3501	CPNRLMPMM	40
40	2a	6	26	9	B3501	IPSPAYGPF	20
41	2a	6	38	9	B3501	SSHCPNRLM	10
42	2a	6	41	9	B7	CPNRLMPMM	20
43	2a	7	2	10	A0201	ALYGLPPYSA	15,898
44	2a	7	5	9	A0201	GLPPYSARV	69,552
45	2a	7	8	9	A24	PYSARVWCL	20
46	2a	8	10	10	A3	GLPTACGTWR	12
47	2a	8	4	8	B3501	SPLCRIGL	20
48	2a	8	11	8	B3501	LPTACGTW	10
49	2a	8	13	9	B7	TACGTWRSI	12
50	2a	8	4	8	B8	SPLCRIGL	16

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51	2a	9	21	8	B3501	TPPRGGSF	20
52	2a	9	5	9	B3501	CFPDSVGRF	40
53	2a	9	35	9	B3501	TFSRHEVSW	10
54	2a	9	9	10	B7	SVGRFSLAQL	20
55	2a	9	10	9	B7	VGRFSLAQL	40
56	2a	10	8	10	A24	KAPKSLSRTL	14,4
57	2a	10	9	9	B3501	APKSLSRTL	60
58	2a	10	8	10	B7	KAPKSLSRTL	12
59	2a	10	9	9	B7	APKSLSRTL	240
60	2a	10	5	9	B7	AVEKAPKSL	18
61	2a	10	9	9	B8	APKSLSRTL	16
62	2a	11	4	10	B3501	IPTLGLESEL	20
63	2a	11	4	10	B7	IPTLGLESEL	80
64	2a	11	1	9	B7	MASIPTLGL	18
65	2a	12	19	10	A0201	YATNATPWT	10,236
66	2a	12	33	10	A1	ASEQFLTKQR	13,5
67	2a	12	28	10	B3501	LPPSSASEQF	20
68	2a	12	11	9	B3501	RAAPMTSSY	12
69	2a	12	11	9	B4403	RAAPMTSSY	18
70	2a	12	19	10	B7	YATNATPWT	12
71	2a	12	13	9	B7	APMTSSYAT	18
72	2a	12	20	9	B7	ATNATPWT	12
73	2a	14	12	10	A0201	MLWHTTEGWT	75,181
74	2a	14	8	9	A0201	GAWAMLWHT	14,819
75	2a	14	5	10	B3501	RPFAGAWMLW	20
76	2a	14	5	8	B3501	RPFAGAWAM	80
77	2a	14	5	9	B3501	RPFAGAWML	40
78	2a	14	4	10	B3901	RRPFAGAWML	15
79	2a	14	5	9	B7	RPFAGAWML	80
80	2a	15	5	10	A1	VSEPQGCLIA	67,5
81	2a	15	5	9	A1	VSEPQGCLI	13,5
82	2a	15	26	10	A24	RGMSLRQRR	12
83	2a	15	6	10	B4403	SEPQGCLIAW	36
84	2a	15	26	10	B7	RGMSLRQRR	12
85	2a	15	4	9	B7	LVSEPQGCL	30
86	2a	15	17	9	B7	SVSATQGL	20
87	2a	16	5	10	B3501	FPKQSNRGRI	24
88	2a	16	5	10	B7	FPKQSNRGRI	12
89	2a	17	3	10	A0201	LLMKWRNVPL	134,369
90	2a	17	2	9	A0201	RLLMKWRNV	87,496
91	2a	17	8	10	A24	RNVPLKRLSL	14,4
92	2a	17	4	10	A3	LMKWRNVPLK	60
93	2a	17	16	10	A3	SLKRGSGWPR	12
94	2a	17	10	8	B3501	VPLKRLSL	20
95	2a	17	3	10	B7	LLMKWRNVPL	12
96	2a	17	9	9	B7	NVPLKRLSL	30
97	2a	17	10	8	B8	VPLKRLSL	16
98	2a	17	4	9	B8	LMKWRNVPL	80
99	2a	18	15	10	A0201	TLARSPPWRT	55,89
100	2a	18	26	9	A0201	SICCLGFCL	17,037
101	2a	18	9	10	A3302	SSHSRSTLAR	15
102	2a	18	7	10	B3501	GPSSHSRSTL	20
103	2a	18	7	10	B7	GPSSHSRSTL	120

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104	2a	20	4	9	A0201	RLPLGSIHL	21,362
105	2a	20	4	9	A24	RLPLGSIHL	12
106	2a	20	5	8	B3501	LPLGSIHL	20
107	2a	20	2	9	B3501	RSRLPLGSI	12
108	2a	21	1	10	A0201	MMWTWWMPTC	116,441
109	2a	21	1	9	A0201	MMWTWWMPT	129,098
110	2a	21	6	9	A0201	WMPTCSWGA	123,786
111	2a	21	7	9	B3501	MPTCSWGAM	40
112	2a	21	7	9	B7	MPTCSWGAM	20
113	2a	22	37	10	A0201	LMSWPFRRQV	64,9
114	2a	22	57	10	A0201	SLGIQTSWPT	12,668
115	2a	22	6	10	B3501	WPSKPSASPL	20
116	2a	22	35	8	B3501	RPLMSWPF	40
117	2a	22	30	8	B3501	TPAVGRPL	20
118	2a	22	40	8	B3501	WPFRQVL	20
119	2a	22	51	8	B3501	CPPSRGSL	20
120	2a	22	30	9	B3501	TPAVGRPLM	40
121	2a	22	6	10	B7	WPSKPSASPL	80
122	2a	22	49	10	B7	PPCPPSRGSL	12
123	2a	22	30	9	B7	TPAVGRPLM	30
124	2a	22	40	8	B8	WPFRQVL	16
125	2a	22	51	8	B8	CPPSRGSL	16
126	2a	24	55	10	A0201	KQLALSFTLT	18,59
127	2a	24	57	10	A0201	LALSFTLTSV	13,975
128	2a	24	75	9	A0201	FMMSHKSF	1444,253
129	2a	24	55	9	A0201	KQLALSFTL	162,682
130	2a	24	58	9	A0201	ALSFTLTSV	159,97
131	2a	24	56	9	A0201	QLALSFTLT	14,159
132	2a	24	47	9	A1	WTPRGVRK	10
133	2a	24	7	10	A24	RFAACPGGPL	40
134	2a	24	55	9	A24	KQLALSFTL	14,4
135	2a	24	51	9	A24	RGVRKQLAL	12
136	2a	24	75	10	A3	FMMSHKSF	18
137	2a	24	32	10	A3	HQFLRPSWPK	13,5
138	2a	24	76	9	A3	MMSHKSF	12
139	2a	24	48	10	B3501	TPPRGVRKQL	20
140	2a	24	73	10	B3501	WPFMMSHKSF	20
141	2a	24	68	10	B3501	GSARRWPFMM	10
142	2a	24	69	8	B3501	SARRWPFM	18
143	2a	24	20	8	B3501	SPCGRTSW	10
144	2a	24	39	9	B3501	WPKMRCASAW	30
145	2a	24	69	9	B3501	SARRWPFMM	18
146	2a	24	68	9	B3501	GSARRWPFM	10
147	2a	24	48	10	B7	TPPRGVRKQL	120
148	2a	24	58	10	B7	ALSFTLTSVL	12
149	2a	24	49	9	B7	PPRGVRKQL	120
150	2a	24	69	9	B7	SARRWPFMM	30
151	2a	24	8	9	B7	FAACPGGPL	18
152	2a	24	75	9	B7	FMMSHKSF	12
153	2a	24	34	9	B7	FLRPSWPKM	10
154	2a	24	39	8	B8	WPKMRCASAW	16
155	2a	26	23	10	A0201	RLAPCLRRPV	13,91
156	2a	26	7	9	A0201	TLPSLRETL	10,468



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157	2a	26	14	10	A1	TLELRRPYTR	18
158	2a	26	20	9	A24	PYTRLAPCL	24
159	2a	26	14	10	A3101	TLELRRPYTR	10
160	2a	26	10	10	A3	SLRETLELRR	12
161	2a	26	14	10	A3	TLELRRPYTR	12
162	2a	26	27	9	A3	CLRRPVLPY	36
163	2a	26	19	10	B3501	RPYTRLAPCL	40
164	2a	26	8	10	B3501	LPSLRETLEL	30
165	2a	26	8	8	B3501	LPSLRETL	20
166	2a	26	25	9	B3501	APCLRRPVL	20
167	2a	26	8	10	B7	LPSLRETLEL	80
168	2a	26	19	10	B7	RPYTRLAPCL	80
169	2a	26	2	10	B7	TPDALTLPSL	24
170	2a	26	24	10	B7	LAPCLRRPVL	18
171	2a	26	25	9	B7	APCLRRPVL	360
172	2a	26	16	9	B7	ELRRPYTRL	60
173	2a	26	24	10	B8	LAPCLRRPVL	16
174	2a	26	8	8	B8	LPSLRETL	16
175	2a	26	10	8	B8	SLRETLEL	12
176	2a	26	16	9	B8	ELRRPYTRL	16
177	2a	26	25	9	B8	APCLRRPVL	16
178	2a	27	3	10	A0201	WLSSQKARGL	19,653
179	2a	28	2	10	A0201	CLWHSAYRAA	12,37
180	2a	28	2	9	A0201	CLWHSAYRA	41,234
181	2a	31	2	10	B7	APVPPRFSSL	240
182	2a	31	4	9	B7	VPPRFSSLL	80
183	2a	31	2	10	B8	APVPPRFSSL	16
184	2a	32	14	10	A24	SYGVGHDEL	220
185	2a	32	19	9	B4403	HDDELVTHY	67,5
186	2a	34	14	9	A3	VLFHPQPSR	30
187	2a	34	4	10	B3501	SPREVRVRPS	12
188	2a	34	7	9	B7	EVRVRPSVL	200
189	2a	34	4	10	B8	SPREVRVRPS	12
190	2a	34	7	8	B8	EVRVRPSV	24
191	2a	34	7	9	B8	EVRVRPSVL	160
192	2a	35	1	9	B7	MVRLHVDEL	200
193	2a	36	14	9	A0201	RLPLQALAL	21,362
194	2a	36	2	10	A24	WFWALAHAEF	11
195	2a	36	14	9	A24	RLPLQALAL	12
196	2a	36	5	10	A3	ALAHAEFPGR	12
197	2a	36	11	10	B3501	FPGRLPLQAL	20
198	2a	36	15	10	B3501	LPLQALALPL	20
199	2a	36	15	8	B3501	LPLQALAL	20
200	2a	36	11	10	B7	FPGRLPLQAL	120
201	2a	36	15	10	B7	LPLQALALPL	80
202	2a	36	6	10	B7	LAHAEFPGRL	12
203	2a	37	6	10	A0201	LLFLRLARFV	481,23
204	2a	37	10	10	A0201	RLARFVDWST	55,89
205	2a	37	3	9	A0205	HLALLFLRL	14
206	2a	37	17	9	A1	WSTPPPPKY	15
207	2a	37	35	9	A1	VTCPYKICR	12,5
208	2a	37	24	10	A24	KYRGRTIHWV	10
209	2a	37	43	9	A24	RSMGVGSAL	16,8

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210	2a	37	24	9	A24	KYRGRTIHV	10
211	2a	37	31	10	A3	HVWVTCPPYK	15
212	2a	37	60	9	A3	GLRLRVDAY	36
213	2a	37	6	9	A3	LLFLRLARF	15
214	2a	37	5	9	A3	ALLFLRLAR	12
215	2a	37	52	10	B3501	IPSPSGRQGL	20
216	2a	37	54	10	B3501	SPSGRQGLRL	20
217	2a	37	54	8	B3501	SPSGRQGL	20
218	2a	37	37	9	B3501	CPYKICRSM	40
219	2a	37	17	9	B3501	WSTPPPPKY	10
220	2a	37	43	9	B3501	RSMGVGSAL	10
221	2a	37	59	10	B4403	QGLRLRVDAY	18
222	2a	37	78	9	B4403	REAGRLARC	18
223	2a	37	52	10	B7	IPSPSGRQGL	120
224	2a	37	54	10	B7	SPSGRQGLRL	80
225	2a	37	60	10	B7	GLRLRVDAYL	40
226	2a	37	37	9	B7	CPYKICRSM	20
227	2a	37	43	9	B7	RSMGVGSAL	12
228	2a	37	54	8	B8	SPSGRQGL	16
229	2a	38	2	9	A0201	ALLPTAPRT	27,572
230	2a	38	7	9	B3501	APRTAPTGL	60
231	2a	38	7	10	B7	APRTAPTGLC	90
232	2a	38	6	10	B7	TAPRTAPTGL	12
233	2a	38	7	9	B7	APRTAPTGL	2400
234	2a	38	7	9	B8	APRTAPTGL	16
235	2a	40	12	10	B3501	RPTRSGDSPW	20
236	2a	42	9	10	A24	RYHHPHRHNS	10
237	2a	42	9	9	A24	RYHHPHRHN	10
238	2a	43	6	10	A0201	AILGQTHVEL	10,868
239	2a	43	7	9	A0201	ILGQTHVEL	36,316
240	2a	43	6	10	B7	AILGQTHVEL	12
241	2a	44	29	10	A1	ACDPTAWLPY	1250
242	2a	44	13	8	B3501	KPRRPYPL	120
243	2a	44	31	8	B3501	DPTAWLPY	40
244	2a	44	31	9	B3501	DPTAWLPYY	40
245	2a	44	30	10	B4403	CDPTAWLPYY	22,5
246	2a	44	29	10	B4403	ACDPTAWLPY	18
247	2a	44	2	9	B4403	DEQAHS LCF	120
248	2a	44	30	9	B4403	CDPTAWLPY	22,5
249	2a	44	31	9	B4403	DPTAWLPYY	13,5
250	2a	44	27	10	B7	VAACDPTAWL	18
251	2a	44	28	9	B7	AACDPTAWL	54
252	2a	45	1	9	A0201	MLCEGPSGL	148,896
253	2a	46	12	10	A0201	YMGPHGPDDT	12,131
254	2a	46	14	10	B3501	GPHGPDDTFF	30
255	2a	46	6	8	B3501	HPVCSNYM	40
256	2a	46	17	8	B3501	GPDDTFFL	12
257	2a	46	14	9	B3501	GPHGPDDTF	20
258	2a	47	2	10	B7	SVVQPPGPPL	30
259	2a	47	3	9	B7	VVQPPGPPL	30

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Table 4f  
2a (4-6)

No.	Strain	ORF	Start	AA	HLA	Peptide sequence	Score
1	HCV 2a	1	10	9	A_0201	YSWSILDDV	19.536
2	HCV 2a	2	8	10	A_0201	RLlQgEELCA	18.382
3	HCV 2a	2	10	10	A_0201	LQGEeLCADL	15.096
4	HCV 2a	2	6	10	B7	LARLLQGEEL	120.000
5	HCV 2a	2	6	10	B8	LARLLQGEEL	16.000
6	HCV 2a	3				no hits	
7	HCV 2a	4	12	9	A_0201	KGYEPVHPL	14.728
8	HCV 2a	4	56	9	A3	VLHGGLLAR	18.000
9	HCV 2a	4	48	9	B7	NPRQQIDDV	40.000
10	HCV 2a	4	48	9	B_3501	NPRQQIDDV	12.000
11	HCV 2a	4	70	9	B_4403	DEGPRNARA	24.000
12	HCV 2a	4	13	10	A1	GYEPvHPLDR	22.500
13	HCV 2a	4	60	10	A_0201	GLLArHDLEC	18.382
14	HCV 2a	4	79	10	B7	IPRQdIHQHL	800.000
15	HCV 2a	4	48	10	B7	NPRQqIDDVl	800.000
16	HCV 2a	4	75	10	B7	NARAIpRQDI	27.000
17	HCV 2a	4	79	10	B8	IPRQdIHQHL	16.000
18	HCV 2a	4	48	10	B8	NPRQqIDDVl	16.000
19	HCV 2a	4	79	10	B_3501	IPRQdIHQHL	60.000
20	HCV 2a	4	48	10	B_3501	NPRQqIDDVl	60.000
21	HCV 2a	4	15	10	B_3501	EPVHpLDRAF	20.000
22	HCV 2a	4	70	10	B_4403	DEGPtNARAI	36.000
23	HCV 2a	5	6	9	A_0201	LVGNRAQTV	10.346
24	HCV 2a	6	10	9	A1	RVEIRSKPY	45.000
25	HCV 2a	6	36	9	A1	LTEHHAIKH	11.250
26	HCV 2a	6	25	9	A_0201	KLIPRSPCV	243.432
27	HCV 2a	6	35	9	A3	ALTEHHAIK	30.000
28	HCV 2a	6	27	9	B7	IPRSPCVVA	30.000
29	HCV 2a	6	25	10	A_0201	KLIPrSPCVV	99.807
30	HCV 2a	6	2	10	A_0201	VLAHgQARRV	23.648
31	HCV 2a	6	17	10	A24	PYGSLRWKRL	22.000
32	HCV 2a	6	16	10	A3	KPYGsLRWRK	13.500
33	HCV 2a	6	20	10	A3	SLRWrKLIPR	12.000
34	HCV 2a	6	27	10	B7	IPRSpCVVAL	800.000
35	HCV 2a	6	12	10	B7	BIRSkPYGSL	60.000
36	HCV 2a	6	27	10	B8	IPRSpCVVAL	16.000
37	HCV 2a	6	27	10	B_3501	IPRSpCVVAL	60.000
38	HCV 2a	6	14	10	B_3501	RSKPyGSLRW	15.000
39	HCV 2a	6	11	10	B_4403	VEIRsKPYGS	30.000
40	HCV 2a	7	25	9	A_0201	TLLPEGHLL	79.041
41	HCV 2a	7	26	9	A3	LLPEGHLLY	12.000
42	HCV 2a	7	18	9	B7	SPIEGDLTL	80.000
43	HCV 2a	7	18	9	B_3501	SPIEGDLTL	40.000
44	HCV 2a	7	2	9	B_4403	AEDQVSPSL	12.000
45	HCV 2a	7	25	10	A1	TLLPeGHLLY	25.000
46	HCV 2a	7	26	10	A_0201	LLPEgHLLYI	919.865
47	HCV 2a	7	17	10	A24	RSPIeGDLTL	12.000

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48	HCV 2a	7	1	10	A24	MAEDqVSPSL	10.080
49	HCV 2a	7	25	10	A3	TLLPeGHLLY	18.000
50	HCV 2a	7	18	10	B7	SPIEGDLTLL	80.000
51	HCV 2a	7	11	10	B7	DVRQgKRSPI	30.000
52	HCV 2a	7	11	10	B8	DVRQgKRSPI	40.000
53	HCV 2a	7	42	10	B_3501	RPRGsGRGQY	240.000
54	HCV 2a	7	18	10	B_3501	SPIEGDLTLL	60.000
55	HCV 2a	7	17	10	B_3501	RSPIeGDLTL	10.000
56	HCV 2a	8	9	10	B_3501	KPQGgSHRGI	16.000
57	HCV 2a	9	8	9	A_0201	GLGHsWWCA	63.342
58	HCV 2a	9	23	9	B_3501	RPRDDVECF	360.000
59	HCV 2a	9	34	9	B_4403	DEVYGLSHA	36.000
60	HCV 2a	9	8	10	A_0201	GLGHsWWCAV	118.238
61	HCV 2a	9	6	10	A_0201	LVGLgHSWWC	30.483
62	HCV 2a	9	30	10	A24	CFNGdEVYGL	30.000
63	HCV 2a	9	23	10	B_3501	RPRDdVECFN	24.000
64	HCV 2a	9	28	10	B_4403	VECFnGDEVY	120.000
65	HCV 2a	10	22	9	B7	AARWRATSL	360.000
66	HCV 2a	10	22	9	B8	AARWRATSL	320.000
67	HCV 2a	10	15	10	A1	GIEVgSNAAR	18.000
68	HCV 2a	10	21	10	B7	NAARwRATSL	12.000
69	HCV 2a	10	21	10	B8	NAARwRATSL	16.000
70	HCV 2a	10	16	10	B_4403	IEVGsNAARW	54.000
71	HCV 2a	11	45	9	A24	STNDVYDDL	10.080
72	HCV 2a	11	26	9	B7	GPRSLHREV	40.000
73	HCV 2a	11	41	9	B7	APMSSTNDV	36.000
74	HCV 2a	11	26	9	B_3501	GPRSLHREV	12.000
75	HCV 2a	11	37	9	B_4403	AEHNAPMSS	12.000
76	HCV 2a	11	41	10	B_3501	APMSsTNDVY	40.000
77	HCV 2a	11	32	10	B_4403	REVGqAEHNA	18.000
78	HCV 2a	11	41	10	B_4403	APMSsTNDVY	12.000
79	HCV 2a	12	13	9	A24	AFLHKPVVL	30.000
80	HCV 2a	12	14	9	A3	FLHKPVVLR	18.000
81	HCV 2a	12	60	9	B7	ALREGAALL	120.000
82	HCV 2a	12	20	9	B7	VLRRDNEHL	40.000
83	HCV 2a	12	59	9	B7	QALREGAAL	12.000
84	HCV 2a	12	60	9	B8	ALREGAALL	12.000
85	HCV 2a	12	25	9	B_4403	NEHLGCQHY	120.000
86	HCV 2a	12	24	10	A1	DNEHLGCQHY	11.250
87	HCV 2a	12	53	10	A1	HVDVrPQALR	10.000
88	HCV 2a	12	6	10	A_0201	TQVDgAIAFL	112.335
89	HCV 2a	12	14	10	A3	FLHKpVVLRR	36.000
90	HCV 2a	12	19	10	B7	VVLRRdNEHL	20.000
91	HCV 2a	12	12	10	B7	IAFLhKPVVL	12.000
92	HCV 2a	12	59	10	B7	QALReGAALL	12.000
93	HCV 2a	12	12	10	B8	IAFLhKPVVL	16.000
94	HCV 2a	12	36	10	B_4403	AEVPhVESRA	48.000
95	HCV 2a	13				no hits	
96	HCV 2a	14	18	9	B7	EPSCPAESL	120.000
97	HCV 2a	14	18	9	B_3501	EPSCPAESL	20.000
98	HCV 2a	15	7	9	A_0201	RQARVTFQL	12.562
99	HCV 2a	15	7	9	A24	RQARVTFQL	11.200

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100	HCV 2a	15	8	10	B7	QARVtFQLWL	120.000
101	HCV 2a	15	8	10	B8	QARVtFQLWL	16.000
102	HCV 2a	15	22	10	B_3501	DSRStPIRTF	15.000
103	HCV 2a	15	3	10	B_4403	AEGRrQARVT	12.000
104	HCV 2a	16	1	10	A_0201	MLSApGHIPV	118.238
105	HCV 2a	17	19	10	B_3501	MPPS1PEEAF	20.000
106	HCV 2a	17	4	10	B_4403	RETFpAGRGS	12.000
107	HCV 2a	18				no hits	
108	HCV 2a	19	16	9	B_4403	RESPERPLW	24.000
109	HCV 2a	19	2	10	A_0201	VLRARGRSFL	15.180
110	HCV 2a	19	14	10	B7	SGRESPERPL	60.000
111	HCV 2a	19	2	10	B7	VLRARGRSFL	60.000
112	HCV 2a	20	6	9	B_3501	GSPRS1PQM	10.000
113	HCV 2a	20	10	10	A_0201	SLPQmGVTPA	11.426
114	HCV 2a	20	2	10	B7	APIAgSPRSL	240.000
115	HCV 2a	20	11	10	B7	LPQMgVTPAL	80.000
116	HCV 2a	20	7	10	B7	SPRS1PQMgV	60.000
117	HCV 2a	20	15	10	B7	GVTPaLSAAL	20.000
118	HCV 2a	20	2	10	B_3501	APIAgSPRSL	20.000
119	HCV 2a	20	11	10	B_3501	LPQMgVTPAL	20.000
120	HCV 2a	20	7	10	B_3501	SPRS1PQMgV	12.000
121	HCV 2a	21				no hits	
122	HCV 2a	22	19	9	B7	APCPGLCCL	240.000
123	HCV 2a	22	16	9	B7	YPPAPCPGL	120.000
124	HCV 2a	22	8	9	B_3501	CPRHTPPGY	120.000
125	HCV 2a	22	16	9	B_3501	YPPAPCPGL	20.000
126	HCV 2a	22	19	9	B_3501	APCPGLCCL	20.000
127	HCV 2a	22	23	10	A_0201	GLCCLQQPPL	21.362
128	HCV 2a	22	15	10	A24	GYPPaPCPGL	360.000
129	HCV 2a	23	5	9	B_3501	KPQQdSLVV	12.000
130	HCV 2a	23	5	10	A24	KPQQdSLVVL	12.000
131	HCV 2a	23	5	10	B7	KPQQdSLVVL	80.000
132	HCV 2a	23	5	10	B_3501	KPQQdSLVVL	40.000
133	HCV 2a	24				no hits	
134	HCV 2a	25	5	10	B7	LPRPpQLGPT	20.000
135	HCV 2a	25	7	10	B_3501	RPPQLGPTCW	20.000
136	HCV 2a	26				no hits	
137	HCV 2a	27	9	9	A24	LFGKGSgHL	20.000
138	HCV 2a	27	3	10	A1	NSPPIALFGK	15.000
139	HCV 2a	27	8	10	A_0201	ALFGkGSgHL	10.275
140	HCV 2a	27	8	10	B7	ALFGkGSgHL	12.000
141	HCV 2a	28	20	9	A_0201	SLNGRRSSV	69.552
142	HCV 2a	28	22	9	B7	NGRRSSVSL	40.000
143	HCV 2a	28	11	9	B_3501	GPPRAHHTF	20.000
144	HCV 2a	28	12	10	B7	PPRAhHTFSL	80.000
145	HCV 2a	29	4	10	A3	TLWFpRssQF	15.000
146	HCV 2a	30				no hits	
147	HCV 2a	31	10	10	B7	AVRGaVGKRA	15.000
148	HCV 2a	32	28	9	A24	VYRSCPPRL	200.000
149	HCV 2a	32	18	9	B7	SPPTCKWAL	80.000
150	HCV 2a	32	18	9	B_3501	SPPTCKWAL	20.000
151	HCV 2a	32	14	10	A3	HLShsPPTCK	30.000

152	HCV 2a	32	27	10	B7	QVYRsCPPRL	20.000
153	HCV 2a	33				no hits	
154	HCV 2a	34				no hits	
155	HCV 2a	35	8	9	A1	GLEAVRHSY	45.000
156	HCV 2a	35	8	9	A3	GLEAVRHSY	18.000
157	HCV 2a	35	1	9	B7	MALPGGGGL	12.000
158	HCV 2a	36	83	9	A1	RSEVFLVVR	27.000
159	HCV 2a	36	121	9	A_0201	RLVFLLVFL	270.234
160	HCV 2a	36	87	9	A_0201	FLVVRTFNL	98.267
161	HCV 2a	36	56	9	A24	GYPGFPQDL	360.000
162	HCV 2a	36	121	9	A24	RLVFLLVFL	14.400
163	HCV 2a	36	69	9	A24	RSLGMGWRL	12.000
164	HCV 2a	36	118	9	B7	CGRRLVFL	40.000
165	HCV 2a	36	12	9	B7	RVSMTLPTL	20.000
166	HCV 2a	36	117	9	B8	SCGRRLVFL	16.000
167	HCV 2a	36	42	9	B_3501	HPAQPSPSF	20.000
168	HCV 2a	36	69	9	B_3501	RSLGMGWRL	10.000
169	HCV 2a	36	84	9	B_4403	SEVFLVVRT	48.000
170	HCV 2a	36	79	10	A_0201	RGWDrSEVFL	26.100
171	HCV 2a	36	114	10	A_0201	NLTScGRRLV	13.910
172	HCV 2a	36	86	10	A24	VFLVvRTPNL	30.000
173	HCV 2a	36	8	10	A24	KPHVrVSMTL	11.200
174	HCV 2a	36	51	10	A24	PYRGqGYPGF	10.000
175	HCV 2a	36	70	10	A3	SLGMgWRLPR	24.000
176	HCV 2a	36	89	10	B7	VVRTpNLGPL	200.000
177	HCV 2a	36	8	10	B7	KPHVrVSMTL	80.000
178	HCV 2a	36	77	10	B7	LPRGwDRSEV	60.000
179	HCV 2a	36	19	10	B7	TLRDlCRGSL	60.000
180	HCV 2a	36	64	10	B7	LPVErRSLGM	20.000
181	HCV 2a	36	35	10	B7	EPRGdRSHPA	20.000
182	HCV 2a	36	35	10	B8	EPRGdRSHPA	32.000
183	HCV 2a	36	19	10	B8	TLRDlCRGSL	12.000
184	HCV 2a	36	64	10	B_3501	LPVErRSLGM	80.000
185	HCV 2a	36	8	10	B_3501	KPHVrVSMTL	40.000
186	HCV 2a	36	6	10	B_3501	SAKPhVRVSM	18.000
187	HCV 2a	36	77	10	B_3501	LPRGwDRSEV	18.000
188	HCV 2a	36	66	10	B_4403	VERRsLGMGW	12.000
189	HCV 2a	37	109	9	A1	YTDPIYISKL	12.500
190	HCV 2a	37	147	9	A_0201	WMMFPNHEL	262.591
191	HCV 2a	37	77	9	A_0201	RVSSWGYYV	33.472
192	HCV 2a	37	70	9	A_0201	FLRAEATRV	24.315
193	HCV 2a	37	148	9	A_0201	MMFPNHELT	16.588
194	HCV 2a	37	36	9	A24	RYRPQTAAL	480.000
195	HCV 2a	37	167	9	A24	RAIGVVGSL	16.800
196	HCV 2a	37	105	9	A3	GLTEYTDPY	54.000
197	HCV 2a	37	27	9	A3	SLVFTAQLK	30.000
198	HCV 2a	37	45	9	B7	PPREMRDAL	120.000
199	HCV 2a	37	147	9	B7	WMMFPNHEL	18.000
200	HCV 2a	37	51	9	B7	DALTARARL	18.000
201	HCV 2a	37	167	9	B7	RAIGVVGSL	12.000
202	HCV 2a	37	18	9	B7	RASGNGVSL	12.000
203	HCV 2a	37	54	9	B8	TARARLFHA	16.000

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204	HCV 2a	37	45	9	B_3501	PPREMRDAL	12.000
205	HCV 2a	37	91	9	B_3501	SSPCNLSIM	10.000
206	HCV 2a	37	73	9	B_4403	AEATRVSSW	144.000
207	HCV 2a	37	129	9	B_4403	MEKKCVIRT	12.000
208	HCV 2a	37	47	9	B_4403	REMRDALTA	12.000
209	HCV 2a	37	157	9	B_4403	GECLTVSQA	12.000
210	HCV 2a	37	109	10	A1	YTDPyISKLR	125.000
211	HCV 2a	37	105	10	A_0201	GLTEyTDPYI	235.260
212	HCV 2a	37	25	10	A_0201	SLSLvFTAQL	81.177
213	HCV 2a	37	147	10	A_0201	WMMFpNHELT	44.885
214	HCV 2a	37	108	10	A24	EYTDpYISKL	264.000
215	HCV 2a	37	27	10	A3	SLVFTaQLKR	12.000
216	HCV 2a	37	62	10	B7	ALRGgAPSFL	120.000
217	HCV 2a	37	44	10	B7	LPPReMRDAL	120.000
218	HCV 2a	37	54	10	B7	TARArLFHAL	120.000
219	HCV 2a	37	126	10	B7	AIRMeKKCVI	12.000
220	HCV 2a	37	19	10	B7	ASGNgVSLSL	12.000
221	HCV 2a	37	97	10	B7	SIMAgRSRGL	12.000
222	HCV 2a	37	120	10	B7	WSRVsWAIRM	10.000
223	HCV 2a	37	126	10	B8	AIRMeKKCVI	20.000
224	HCV 2a	37	54	10	B8	TARArLFHAL	16.000
225	HCV 2a	37	134	10	B8	VIRTMrTHIV	12.000
226	HCV 2a	37	120	10	B_3501	WSRVsWAIRM	30.000
227	HCV 2a	37	44	10	B_3501	LPPReMRDAL	20.000
228	HCV 2a	37	90	10	B_3501	ASSPcNLSIM	10.000
229	HCV 2a	37	111	10	B_3501	DPYTsKLRSW	10.000
230	HCV 2a	37	100	10	B_4403	AGRSrGLTEY	13.500
231	HCV 2a	38	19	9	A_0201	ALQAARAFT	40.986
232	HCV 2a	38	11	10	B7	IVGAtIPAAL	20.000
233	HCV 2a	39	16	9	A_0201	RLYPQVWPL	1.179.204
234	HCV 2a	39	24	9	A_0201	LLLNIgPPT	46.873
235	HCV 2a	39	20	9	A_0201	QVWPLLLNI	17.427
236	HCV 2a	39	17	9	A24	LYPQVWPLL	420.000
237	HCV 2a	39	16	9	A3	RLYPQVWPL	40.500
238	HCV 2a	39	18	9	B7	YPQVWPLLL	80.000
239	HCV 2a	39	10	9	B_3501	TPLARQRLY	40.000
240	HCV 2a	39	18	9	B_3501	YPQVWPLLL	20.000
241	HCV 2a	39	16	10	A_0201	RLYPqVWPLL	116.211
242	HCV 2a	39	17	10	A24	LYPQvWPLLL	300.000
243	HCV 2a	39	16	10	A24	RLYPqVWPLL	13.440
244	HCV 2a	39	5	10	A3	MLVVSTPLAR	12.000
245	HCV 2a	39	3	10	B7	FPMLvVSTPL	240.000
246	HCV 2a	39	3	10	B_3501	FPMLvVSTPL	20.000
247	HCV 2a	40	19	9	A_0201	VLMSLSVTV	437.482
248	HCV 2a	40	34	9	A24	SYEKPIGSF	150.000
249	HCV 2a	40	13	9	A24	WYMASSVLM	37.500
250	HCV 2a	40	22	9	A3	SLSVTVESK	60.000
251	HCV 2a	40	42	9	A3	FLSAHAFKR	12.000
252	HCV 2a	40	15	9	B7	MASSVLMSL	12.000
253	HCV 2a	40	6	9	B_3501	SSGKEQAWY	15.000
254	HCV 2a	40	7	9	B_3501	SGKEQAWYM	12.000
255	HCV 2a	40	51	9	B_3501	NSTRWAGEY	10.000

256	HCV 2a	40	27	9	B_4403	VESKHRVSY	120.000
257	HCV 2a	40	26	10	A1	TVESkHRVSY	90.000
258	HCV 2a	40	14	10	A_0201	YMASsVLMSL	163.232
259	HCV 2a	40	18	10	A_0201	SVLMSLSVTV	22.517
260	HCV 2a	40	34	10	A24	SYEKpIGSFL	420.000
261	HCV 2a	40	11	10	B7	QAWYmASSVL	12.000
262	HCV 2a	40	5	10	B_3501	ASSGkeQAWY	15.000
263	HCV 2a	40	6	10	B_3501	SSGKeQAWYM	10.000
264	HCV 2a	40	33	10	B_3501	VSYEKPIGSF	10.000
265	HCV 2a	40	35	10	B_4403	YEKPIGSFSL	12.000
266	HCV 2a	41	22	9	A_0201	WLTALPDKL	48.151
267	HCV 2a	41	60	9	A_0201	ALTLEAASL	21.362
268	HCV 2a	41	15	9	A24	SFHTDLMWL	20.000
269	HCV 2a	41	29	9	A3	KLRTSLAPY	18.000
270	HCV 2a	41	55	9	B7	KVRSFALTL	200.000
271	HCV 2a	41	26	9	B7	LPDKLRDSL	36.000
272	HCV 2a	41	34	9	B7	LAPYPYLDL	18.000
273	HCV 2a	41	60	9	B7	ALTLEAASL	12.000
274	HCV 2a	41	53	9	B8	SSKVRSFAL	80.000
275	HCV 2a	41	53	9	B_3501	SSKVRSFAL	15.000
276	HCV 2a	41	37	9	B_3501	YPYLDLAEW	15.000
277	HCV 2a	41	29	9	B_3501	KLRTSLAPY	12.000
278	HCV 2a	41	63	9	B_4403	LEAASLMSF	120.000
279	HCV 2a	41	62	10	A1	TLEAaSLMSF	45.000
280	HCV 2a	41	25	10	A_0201	ALPDkLRDSL	87.586
281	HCV 2a	41	33	10	A_0201	SLAPyPYLDL	32.044
282	HCV 2a	41	39	10	A_0201	YLDLaEWGGV	28.283
283	HCV 2a	41	20	10	A3	LMWLtALPDK	150.000
284	HCV 2a	41	11	10	B7	SSRRsFHTDL	40.000
285	HCV 2a	41	25	10	B7	ALPDkLRDSL	18.000
286	HCV 2a	41	59	10	B7	FALTLEAASL	12.000
287	HCV 2a	41	52	10	B7	ASSKvRSFAL	12.000
288	HCV 2a	41	14	10	B_3501	RSFHTdLMWL	15.000
289	HCV 2a	41	11	10	B_3501	SSRRsFHTDL	15.000
290	HCV 2a	41	43	10	B_4403	AEWGgVNWHA	18.000
291	HCV 2a	42	115	9	A_0201	RLLGgGVGV	257.342
292	HCV 2a	42	94	9	A_0201	VLMAWCRA	234.365
293	HCV 2a	42	105	9	A_0201	MVLSLRPTV	38.280
294	HCV 2a	42	108	9	B7	SLRPTVRRL	40.000
295	HCV 2a	42	21	9	B_3501	EPGAASPPW	10.000
296	HCV 2a	42	97	9	B_3501	ASCWRASPM	10.000
297	HCV 2a	42	29	9	B_4403	WEGGRSSTW	18.000
298	HCV 2a	42	116	10	A_0201	LLGGgVGVFL	199.738
299	HCV 2a	42	93	10	A_0201	KVLMaWCRA	42.220
300	HCV 2a	42	124	10	A_0201	FLGGgRAQPA	22.853
301	HCV 2a	42	78	10	B7	APVERPESPL	360.000
302	HCV 2a	42	108	10	B7	SLRPTVRRL	60.000
303	HCV 2a	42	44	10	B7	SPGSpSRGGM	30.000
304	HCV 2a	42	112	10	B7	TVRRlLGGGV	10.000
305	HCV 2a	42	44	10	B_3501	SPGSpSRGGM	40.000
306	HCV 2a	42	78	10	B_3501	APVERPESPL	40.000
307	HCV 2a	42	91	10	B_3501	WPKVlMASCW	30.000



308	HCV 2a	42	20	10	B_4403	SEPGaASPPW	54.000
309	HCV 2a	42	54	10	B_4403	EEVEpVSERA	12.000
310	HCV 2a	43				no hits	
311	HCV 2a	44				no hits	
312	HCV 2a	45				no hits	
313	HCV 2a	46	1	9	A_0201	MLAPQGHRV	118.238
314	HCV 2a	46	10	9	A_0201	VMMFVPAHT	33.853
315	HCV 2a	46	3	9	B7	APQGHrVVM	90.000
316	HCV 2a	46	12	9	B7	MPVPAHTPL	80.000
317	HCV 2a	46	3	9	B_3501	APQGHrVVM	40.000
318	HCV 2a	46	12	9	B_3501	MPVPAHTPL	20.000
319	HCV 2a	46	11	10	A_0201	MMPVpAHTPL	26.228
320	HCV 2a	46	3	10	B7	APQGHrVVM	60.000
321	HCV 2a	46	3	10	B_3501	APQGHrVVM	40.000
322	HCV 2a	47	25	9	A_0201	QLWSLLSRL	407.808
323	HCV 2a	47	28	9	A_0201	SLLSRLVIV	242.674
324	HCV 2a	47	35	9	A_0201	IVREPSSWV	17.731
325	HCV 2a	47	29	9	A3	LLSRLVIVR	24.000
326	HCV 2a	47	22	9	B7	SVIQLWSLL	20.000
327	HCV 2a	47	35	9	B7	IVREPSSWV	15.000
328	HCV 2a	47	10	9	B_3501	RSHEPAHGM	40.000
329	HCV 2a	47	25	10	A_0201	QLWSLLSRLV	115.456
330	HCV 2a	47	34	10	A_0201	VIVRePSSWV	89.418
331	HCV 2a	47	17	10	A_0201	GMGQsSVIQL	35.485
332	HCV 2a	47	24	10	A_0201	IQLWsLSRL	31.334
333	HCV 2a	47	28	10	A3	SLLSrLVIVR	36.000
334	HCV 2a	47	17	10	A3	GMGQsSVIQL	10.800
335	HCV 2a	47	37	10	B_4403	REPSSWVTRC	18.000
336	HCV 2a	48	109	9	A_0201	RMLRRIVVL	53.831
337	HCV 2a	48	110	9	A_0201	MLRRIVVLV	20.668
338	HCV 2a	48	74	9	A_0201	TLPRPMLPT	17.140
339	HCV 2a	48	19	9	A_0201	RMPAQMTPT	12.379
340	HCV 2a	48	109	9	A24	RMLRRIVVL	12.000
341	HCV 2a	48	114	9	A24	IVVLVDNGL	10.080
342	HCV 2a	48	116	9	A3	VLVDNGLVR	12.000
343	HCV 2a	48	114	9	B7	IVVLVDNGL	20.000
344	HCV 2a	48	75	9	B7	LPRPMLPTA	20.000
345	HCV 2a	48	122	9	B7	LVRAALNAI	20.000
346	HCV 2a	48	103	9	B7	DASQPPRML	18.000
347	HCV 2a	48	67	9	B7	PARISTSTL	12.000
348	HCV 2a	48	37	9	B7	GSRLMTSSM	10.000
349	HCV 2a	48	37	9	B_3501	GSRLMTSSM	30.000
350	HCV 2a	48	58	9	B_3501	RAPEMPAPY	24.000
351	HCV 2a	48	139	9	B_3501	GSVDSPARY	20.000
352	HCV 2a	48	109	10	A_0201	RMLRrIVVLV	427.474
353	HCV 2a	48	116	10	A_0201	VLVDnGLVRA	79.642
354	HCV 2a	48	121	10	A_0201	GLVRaALNAI	23.995
355	HCV 2a	48	74	10	A_0201	TLPRpMLPTA	11.426
356	HCV 2a	48	113	10	A24	RIVVLVDNGL	20.160
357	HCV 2a	48	80	10	B7	LPTAaPTRPL	120.000
358	HCV 2a	48	66	10	B7	YPARiSTSTL	80.000
359	HCV 2a	48	122	10	B7	LVRAaLNAIM	50.000

360	HCV 2a	48	11	10	B7	SPGPtWRRRM	30.000
361	HCV 2a	48	75	10	B7	LPRPmLPTAA	20.000
362	HCV 2a	48	11	10	B_3501	SPGPtWRRRM	40.000
363	HCV 2a	48	66	10	B_3501	YPARiSTSTL	20.000
364	HCV 2a	48	80	10	B_3501	LPTAaPTRPL	20.000
365	HCV 2a	48	43	10	B_3501	SSMEgFSPDM	20.000
366	HCV 2a	48	92	10	B_3501	KPVApAGGAI	16.000
367	HCV 2a	48	70	10	B_3501	ISTStLPRPM	10.000
368	HCV 2a	48	128	10	B_4403	NAIMEATAGF	11.250
369	HCV 2a	49	40	9	A_0201	WILDFSISA	181.139
370	HCV 2a	49	9	9	A_0201	CLAQNCSL	21.362
371	HCV 2a	49	41	9	A_0201	ILDFSISAI	16.317
372	HCV 2a	49	38	9	A_0201	KPWILDFSI	11.475
373	HCV 2a	49	51	9	B7	CPSSMRAAL	120.000
374	HCV 2a	49	34	9	B7	ACCNKPWIL	12.000
375	HCV 2a	49	24	9	B7	AGCMSWACL	12.000
376	HCV 2a	49	34	9	B8	ACCNKPWIL	16.000
377	HCV 2a	49	51	9	B_3501	CPSSMRAAL	20.000
378	HCV 2a	49	38	9	B_3501	KPWILDFSI	16.000
379	HCV 2a	49	32	9	B_4403	LEACCNKPW	36.000
380	HCV 2a	49	19	9	B_4403	HEASTAGCM	12.000
381	HCV 2a	49	41	10	A1	ILDFsISAIR	10.000
382	HCV 2a	49	40	10	A_0201	WILDfSISAI	230.237
383	HCV 2a	49	50	10	A24	RCPSSMRAAL	12.000
384	HCV 2a	49	1	10	B7	MPLMkFHMCL	80.000
385	HCV 2a	49	23	10	B7	TAGCmSWACL	12.000
386	HCV 2a	49	33	10	B7	EACCNKPWIL	12.000
387	HCV 2a	49	33	10	B8	EACCNKPWIL	32.000
388	HCV 2a	49	1	10	B_3501	MPLMkFHMCL	20.000
389	HCV 2a	49	46	10	B_3501	ISAIrCPSSM	10.000
390	HCV 2a	49	19	10	B_4403	HEASTAGCMS	12.000
391	HCV 2a	50	57	9	A1	VTEPKRYRR	450.000
392	HCV 2a	50	6	9	A1	MMETHPVAK	18.000
393	HCV 2a	50	8	9	A1	ETHPVAKQY	12.500
394	HCV 2a	50	39	9	A_0201	CMHVAMYFV	635.435
395	HCV 2a	50	43	9	A_0201	AMYFVTGCV	20.897
396	HCV 2a	50	62	9	A24	RYRRGVGPT	10.000
397	HCV 2a	50	6	9	A3	MMETHPVAK	20.000
398	HCV 2a	50	23	9	B7	TPPARTHVL	80.000
399	HCV 2a	50	66	9	B7	GVGPTRVGL	30.000
400	HCV 2a	50	4	9	B7	RPMMEHPV	12.000
401	HCV 2a	50	74	9	B7	LSRVRFHM	10.000
402	HCV 2a	50	74	9	B8	LSRVRFHM	20.000
403	HCV 2a	50	23	9	B8	TPPARTHVL	16.000
404	HCV 2a	50	74	9	B_3501	LSRVRFHM	30.000
405	HCV 2a	50	36	9	B_3501	RSACMHVAM	20.000
406	HCV 2a	50	23	9	B_3501	TPPARTHVL	20.000
407	HCV 2a	50	59	9	B_3501	EPKRYRRGV	12.000
408	HCV 2a	50	4	9	B_3501	RPMMEHPV	12.000
409	HCV 2a	50	83	9	B_3501	TSQDGGGAL	10.000
410	HCV 2a	50	8	9	B_4403	ETHPVAKQY	20.250
411	HCV 2a	50	37	9	B_4403	SACMHVAMY	18.000

412	HCV 2a	50	57	10	A1	VTEPKRYRRG	22.500
413	HCV 2a	50	73	10	A_0201	GLSRvRHFHM	28.814
414	HCV 2a	50	38	10	A_0201	ACMHvAMYFV	21.250
415	HCV 2a	50	39	10	A_0201	CMHVvAMYFVT	19.198
416	HCV 2a	50	22	10	A24	KTPPaRTHVL	14.400
417	HCV 2a	50	65	10	A24	RGVGpTRVGL	12.000
418	HCV 2a	50	43	10	A3	AMYFvTGCVK	100.000
419	HCV 2a	50	31	10	B7	LVMTsRSACM	15.000
420	HCV 2a	50	36	10	B_3501	RSACmHVAMY	20.000
421	HCV 2a	50	54	10	B_3501	TSLVtEPKRY	15.000
422	HCV 2a	50	7	10	B_4403	METHpVAKQY	405.000
423	HCV 2a	50	36	10	B_4403	RSACmHVAMY	18.000
424	HCV 2a	51	30	9	A_0201	SLTVVSAGV	69.552
425	HCV 2a	51	28	9	A_0201	ALSLTVVSA	11.426
426	HCV 2a	51	26	9	A24	KYALSLTVV	10.000
427	HCV 2a	51	21	9	B7	KPGVLKYAL	80.000
428	HCV 2a	51	23	9	B7	GVLKYALSL	20.000
429	HCV 2a	51	21	9	B_3501	KPGVLKYAL	40.000
430	HCV 2a	51	19	9	B_4403	TGKPGVLKY	27.000
431	HCV 2a	51	15	10	A_0201	WSWHTGKPGV	17.334
432	HCV 2a	51	26	10	A24	KYALsLTVVS	12.000
433	HCV 2a	51	18	10	B_4403	HTGKpGVLKY	13.500
434	HCV 2a	52				no hits	
435	HCV 2a	53	14	9	A_0201	FEWQKIKCL	36.476
436	HCV 2a	53	18	9	B_3501	KIKCLPPLM	12.000
437	HCV 2a	53	13	10	A24	FFEWqKIKCL	30.000
438	HCV 2a	54	1	9	B7	MPRMVFAST	20.000
439	HCV 2a	54	1	10	B7	MPRMvVASTA	20.000
440	HCV 2a	54	7	10	B_3501	ASTAwHSSHM	10.000
441	HCV 2a	55	16	9	A1	GLMPCALDK	10.000
442	HCV 2a	55	52	9	A_0201	TLVLFPLPV	264.298
443	HCV 2a	55	41	9	A_0201	TLYPWAAYA	87.437
444	HCV 2a	55	12	9	A_0201	VLMLGLMPC	71.872
445	HCV 2a	55	13	9	A_0201	LMLGLMPCA	51.908
446	HCV 2a	55	14	9	A_0201	MLGLMPCAL	36.316
447	HCV 2a	55	54	9	A_0201	VLFPPLVGA	31.249
448	HCV 2a	55	7	9	A_0201	TVLTPVLML	15.907
449	HCV 2a	55	47	9	A24	AYATGTLVL	200.000
450	HCV 2a	55	24	9	A24	KYAPNPRVA	12.000
451	HCV 2a	55	16	9	A3	GLMPCALDK	270.000
452	HCV 2a	55	7	9	B7	TVLTPVLML	30.000
453	HCV 2a	55	5	9	B7	VVTVLTPVL	20.000
454	HCV 2a	55	10	9	B7	TPVLMLGLM	20.000
455	HCV 2a	55	45	9	B7	WAAYATGTL	12.000
456	HCV 2a	55	1	9	B7	MAAPVVTVL	12.000
457	HCV 2a	55	10	9	B_3501	TPVLMLGLM	40.000
458	HCV 2a	55	40	9	B_4403	STLYPWAAY	12.000
459	HCV 2a	55	13	10	A_0201	LMLGLMPCAL	97.045
460	HCV 2a	55	8	10	A_0201	VLTPVLMLGL	83.527
461	HCV 2a	55	12	10	A_0201	VLMLGLMPCA	71.872
462	HCV 2a	55	17	10	A_0201	LMPCaLDKYA	33.548
463	HCV 2a	55	41	10	A_0201	TLYPwAAYAT	23.846

464	HCV 2a	55	51	10	A_0201	GTLVLFPPLPV	13.582
465	HCV 2a	55	47	10	A24	AYATgTLVLF	100.000
466	HCV 2a	55	24	10	A24	KYAPhPRVAA	12.000
467	HCV 2a	55	16	10	A3	GLMPcALDKY	40.500
468	HCV 2a	55	28	10	B7	NPRVaATEGL	800.000
469	HCV 2a	55	46	10	B7	AAAYAtGTLVL	36.000
470	HCV 2a	55	3	10	B7	APVVtVLTPV	12.000
471	HCV 2a	55	49	10	B7	ATGTlVLFPL	12.000
472	HCV 2a	55	28	10	B8	NPRVaATEGL	16.000
473	HCV 2a	55	28	10	B_3501	NPRVaATEGL	60.000
474	HCV 2a	55	56	10	B_3501	FPLPvGACKY	40.000
475	HCV 2a	55	39	10	B_3501	TSTLyPWAAY	10.000
476	HCV 2a	55	34	10	B_4403	TEGLsTSTLY	180.000
477	HCV 2a	55	56	10	B_4403	FPLPvGACKY	27.000
478	HCV 2a	56	36	9	A_0201	GPPEDPFKV	10.797
479	HCV 2a	56	47	9	A3	GLGESNAPR	18.000
480	HCV 2a	56	108	9	B7	GPREPArVL	1.200.000
481	HCV 2a	56	93	9	B7	HPTKSPSAL	80.000
482	HCV 2a	56	40	9	B7	DPFKVERGL	80.000
483	HCV 2a	56	57	9	B7	SPRLRAGMT	20.000
484	HCV 2a	56	52	9	B7	NAPRLSPRL	12.000
485	HCV 2a	56	108	9	B8	GPREPArVL	24.000
486	HCV 2a	56	57	9	B8	SPRLRAGMT	16.000
487	HCV 2a	56	108	9	B_3501	GPREPArVL	120.000
488	HCV 2a	56	40	9	B_3501	DPFKVERGL	20.000
489	HCV 2a	56	93	9	B_3501	HPTKSPSAL	20.000
490	HCV 2a	56	36	9	B_3501	GPPEDPFKV	12.000
491	HCV 2a	56	65	9	B_3501	TSAFRVTRY	10.000
492	HCV 2a	56	56	9	B_3501	LSPRLRAGM	10.000
493	HCV 2a	56	65	9	B_4403	TSAFRVTRY	27.000
494	HCV 2a	56	17	9	B_4403	REHTAARKI	13.500
495	HCV 2a	56	34	10	A1	STGPPeDPFK	10.000
496	HCV 2a	56	47	10	A_0201	GLGEsNAPRL	87.586
497	HCV 2a	56	63	10	A3	GMTSaFRVTR	36.000
498	HCV 2a	56	108	10	B7	GPREPArVLL	1.200.000
499	HCV 2a	56	77	10	B7	APHEhGSKDL	240.000
500	HCV 2a	56	53	10	B7	APRLsPRLRA	135.000
501	HCV 2a	56	4	10	B7	ASTGmKSMDL	12.000
502	HCV 2a	56	108	10	B8	GPREPArVLL	24.000
503	HCV 2a	56	108	10	B_3501	GPREPArVLL	120.000
504	HCV 2a	56	77	10	B_3501	APHEhGSKDL	40.000
505	HCV 2a	56	82	10	B_3501	GSKDlVPGGL	30.000
506	HCV 2a	56	2	10	B_3501	SSAStGMKSM	10.000
507	HCV 2a	56	64	10	B_4403	MTSAfrVTRY	13.500
508	HCV 2a	57	31	9	A_0201	TMAPKRPRV	50.232
509	HCV 2a	57	22	9	A_0201	VLSRPVMLT	29.137
510	HCV 2a	57	8	9	A_0201	WVTVDRTWI	23.096
511	HCV 2a	57	27	9	A3	VMLTTMAPK	45.000
512	HCV 2a	57	3	9	B7	VPRKDWTV	40.000
513	HCV 2a	57	21	9	B7	SVLSRPVML	20.000
514	HCV 2a	57	33	9	B_3501	APKRPRVCW	30.000
515	HCV 2a	57	3	9	B_3501	VPRKDWTV	18.000

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516	HCV 2a	57	20	9	B_3501	CSVLSRPVM	10.000
517	HCV 2a	57	22	10	A_0201	VLSRpVMLTT	29.137
518	HCV 2a	57	23	10	B7	LSRpVMLTTM	10.000
519	HCV 2a	57	33	10	B8	APKRpRVCWA	16.000
520	HCV 2a	57	23	10	B_3501	LSRpVMLTTM	30.000
521	HCV 2a	58				no hits	
522	HCV 2a	59	12	9	A_0201	TMTFFSIGL	58.628
523	HCV 2a	59	21	9	A_0201	KMIGSTATA	12.558
524	HCV 2a	59	27	9	B7	ATAKSRRPL	18.000
525	HCV 2a	59	28	9	B8	TAKSRRPLA	16.000
526	HCV 2a	59	33	9	B_3501	RPLAAQSDI	16.000
527	HCV 2a	59	21	10	A3	KMIGsTATAK	135.000
528	HCV 2a	59	9	10	B7	APQTmTFFSI	24.000
529	HCV 2a	59	26	10	B7	TATAkSRRPL	18.000
530	HCV 2a	59	11	10	B7	QTMTfFSIGL	12.000
531	HCV 2a	59	28	10	B8	TAKSrRPLAA	16.000
532	HCV 2a	60	16	10	B7	MPSRpPRACM	45.000
533	HCV 2a	60	16	10	B_3501	MPSRpPRACM	40.000
534	HCV 2a	60	1	10	B_3501	MSNTtPGQNM	10.000
535	HCV 2a	61				no hits	
536	HCV 2a	62	8	9	A_0201	KMTKYRKPL	53.999
537	HCV 2a	62	133	9	A_0201	KLHAAVSLC	39.992
538	HCV 2a	62	104	9	A_0201	KMAHSVVEC	28.883
539	HCV 2a	62	1	9	A24	MYQAATKKM	41.250
540	HCV 2a	62	11	9	A24	KYRKPLQLA	12.000
541	HCV 2a	62	17	9	A3	QLAALAACK	20.000
542	HCV 2a	62	82	9	A3	TIFWWRWSR	18.000
543	HCV 2a	62	76	9	A3	YMYCTSTIF	10.000
544	HCV 2a	62	126	9	B7	SQRSPrVKL	90.000
545	HCV 2a	62	143	9	B7	IPPTYILIL	80.000
546	HCV 2a	62	112	9	B7	CNRGDSWLL	40.000
547	HCV 2a	62	129	9	B7	SPRVKLHAA	20.000
548	HCV 2a	62	129	9	B8	SPRVKLHAA	16.000
549	HCV 2a	62	51	9	B8	SARRRNKST	16.000
550	HCV 2a	62	70	9	B_3501	RAGDRPYMY	24.000
551	HCV 2a	62	143	9	B_3501	IPPTYILIL	20.000
552	HCV 2a	62	4	9	B_4403	AATKMTKY	20.250
553	HCV 2a	62	98	9	B_4403	SEKEQGKMA	12.000
554	HCV 2a	62	110	9	B_4403	VECNRGDSW	12.000
555	HCV 2a	62	139	10	A_0201	SLCSiPPTYI	57.380
556	HCV 2a	62	75	10	A24	PYMYcTSTIF	15.000
557	HCV 2a	62	125	10	A24	KSQRsPRVKL	13.200
558	HCV 2a	62	11	10	A24	KYRKpLQLAA	12.000
559	HCV 2a	62	68	10	B7	FVRagDRPYM	75.000
560	HCV 2a	62	129	10	B7	SPRVkLHAAV	40.000
561	HCV 2a	62	131	10	B7	RVKLhAAVSL	20.000
562	HCV 2a	62	9	10	B8	MTKYrKPLQL	80.000
563	HCV 2a	62	123	10	B8	SSKSqRSPRV	12.000
564	HCV 2a	62	74	10	B_3501	RPYMyCTSTI	16.000
565	HCV 2a	62	129	10	B_3501	SPRVkLHAAV	12.000
566	HCV 2a	62	138	10	B_3501	VSLSiPPTY	10.000
567	HCV 2a	62	125	10	B_3501	KSQRsPRVKL	10.000
568	HCV 2a	62	3	10	B_4403	QAATkKMTKY	20.250
569	HCV 2a	63	30	9	A_0201	VLFNRKTSV	437.482

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570	HCV 2a	63	9	9	A_0201	VLVKPVEFI	109.935
571	HCV 2a	63	6	9	B7	APQVLVKPV	12.000
572	HCV 2a	63	24	9	B_3501	DPRGGRVLF	60.000
573	HCV 2a	63	29	10	A_0201	RVLfNrkTSV	22.517
574	HCV 2a	63	8	10	A_0201	QVLVkpVEFI	20.936
575	HCV 2a	63	35	10	A_0201	KTSVsFSPHV	12.848
576	HCV 2a	63	31	10	A24	LFNRkTSVSF	15.000
577	HCV 2a	63	24	10	B8	DPRGgRVLFN	16.000
578	HCV 2a	64	7	9	A_0201	VLISWMFCL	484.457
579	HCV 2a	64	6	9	A_0201	LVLISWMFC	25.565
580	HCV 2a	64	7	9	A3	VLISWMFCL	12.150
581	HCV 2a	64	4	9	B7	LPLVLISWM	20.000
582	HCV 2a	64	4	9	B_3501	LPLVLISWM	40.000
583	HCV 2a	64	6	10	A_0201	LVLIsWMFCL	156.843
584	HCV 2a	64	3	10	A_0201	QLPLvLISWM	62.845
585	HCV 2a	64	16	10	B7	EPGErRPAKL	80.000
586	HCV 2a	64	6	10	B7	LVLIsWMFCL	20.000
587	HCV 2a	64	16	10	B8	EPGErRPAKL	48.000
588	HCV 2a	64	19	10	B8	ERRPaKLSVL	16.000
589	HCV 2a	64	16	10	B_3501	EPGErRPAKL	40.000
590	HCV 2a	64	4	10	B_3501	LPLVLISWMF	20.000
591	HCV 2a	65	4	10	A3	TLAHaPCIEK	60.000
592	HCV 2a	66	3	9	A_0201	SMMTSGTRI	27.879
593	HCV 2a	67	19	9	A_0201	VMVPRMEQL	29.559
594	HCV 2a	67	39	9	A_0201	IMNIWAASI	12.809
595	HCV 2a	67	37	9	B_4403	GEIMNIWAA	20.000
596	HCV 2a	67	10	10	A_0201	IMSHaIRCPV	85.394
597	HCV 2a	67	26	10	A_0201	QLHScTNQWC	27.324
598	HCV 2a	67	21	10	B7	VPRMeQLHSC	20.000
599	HCV 2a	67	11	10	B_3501	MSHAIrCPVM	10.000
600	HCV 2a	67	37	10	B_4403	GEIMnIWAAS	20.000
601	HCV 2a	68	2	9	A_0201	SMCVRKPCV	50.232
602	HCV 2a	68	25	9	A_0201	IQHRDVFFPT	17.134
603	HCV 2a	68	12	9	B7	APRCCTATF	12.000
604	HCV 2a	68	9	9	B7	CVRAPRCCT	1.250
605	HCV 2a	68	12	9	B_3501	APRCCTATF	0.000
606	HCV 2a	68	24	10	A_0201	GIQhrDVFFPT	3.669
607	HCV 2a	69	1	9	A_0201	MLSLEqSLV	118.238
608	HCV 2a	69	2	10	B_3501	LSLEqSLVTM	20.000
609	HCV 2a	70	14	9	A_0201	KEQPGRFPV	27.454
610	HCV 2a	70	12	9	B_4403	IEKEQPGRF	40.000
611	HCV 2a	70	14	9	B_4403	KEQPGRFPV	12.000
612	HCV 2a	71	83	9	A1	RSEVFLVVR	27.000
613	HCV 2a	71	121	9	A_0201	RLVFLLVFL	270.234
614	HCV 2a	71	87	9	A_0201	FLVVRTPNL	98.267
615	HCV 2a	71	56	9	A24	GYPGFPQDL	360.000
616	HCV 2a	71	121	9	A24	RLVFLLVFL	14.400
617	HCV 2a	71	69	9	A24	RSLGMGWRL	12.000
618	HCV 2a	71	118	9	B7	CGRRLVFLL	40.000
619	HCV 2a	71	12	9	B7	RVSMTLPTL	20.000
620	HCV 2a	71	117	9	B8	SCGRRLVFL	16.000
621	HCV 2a	71	42	9	B_3501	HPAQSPSPF	20.000
622	HCV 2a	71	69	9	B_3501	RSLGMGWRL	10.000
623	HCV 2a	71	84	9	B_4403	SEVFLVVRT	48.000

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624	HCV 2a	71	79	10	A_0201	RGWDrSEVFL	26.100
625	HCV 2a	71	114	10	A_0201	NLTScGRRLV	13.910
626	HCV 2a	71	86	10	A24	VFLVvRTPNL	30.000
627	HCV 2a	71	8	10	A24	KPHVrVSMTL	11.200
628	HCV 2a	71	51	10	A24	PYRGqGYPGF	10.000
629	HCV 2a	71	70	10	A3	SLGMgWRLPR	24.000
630	HCV 2a	71	89	10	B7	VVRTpNLGPL	200.000
631	HCV 2a	71	8	10	B7	KPHVrVSMTL	80.000
632	HCV 2a	71	77	10	B7	LPRGwDRSEV	60.000
633	HCV 2a	71	19	10	B7	TLRDlCRGSL	60.000
634	HCV 2a	71	64	10	B7	LPVErRSLGM	20.000
635	HCV 2a	71	35	10	B7	EPRGdRSHPA	20.000
636	HCV 2a	71	2	10	B7	YPMRsAKPHV	12.000
637	HCV 2a	71	35	10	B8	EPRGdRSHPA	32.000
638	HCV 2a	71	19	10	B8	TLRDlCRGSL	12.000
639	HCV 2a	71	64	10	B_3501	LPVErRSLGM	80.000
640	HCV 2a	71	8	10	B_3501	KPHVrVSMTL	40.000
641	HCV 2a	71	6	10	B_3501	SAKPhVRVSM	18.000
642	HCV 2a	71	77	10	B_3501	LPRGwDRSEV	18.000
643	HCV 2a	71	66	10	B_4403	VERRsLGMGW	12.000

Table 4g  
2b (1-3)

No.	Strain	ORF	Start	AA	HLA	Peptide sequence	Score
1	HCV 2b	1	15	9	A_0201	LLSSRRKRL	36,32
2	HCV 2b	1	17	9	B7	SSRRKRLAM	15
3	HCV 2b	1	2	9	B7	GATLRHESL	12
4	HCV 2b	1	17	9	B8	SSRRKRLAM	20
5	HCV 2b	1	2	9	B8	GATLRHESL	16
6	HCV 2b	1	14	10	B8	ELLSSRRKRL	16
7	HCV 2b	1	17	9	B_3501	SSRRKRLAM	30
8	HCV 2b	1	16	10	B_3501	LSSRRKRLAM	10
9	HCV 2b	2	43	9	A_0201	VVLPISWGTL	30,76
10	HCV 2b	2	44	10	A_0201	VLPISWGTSLS	36,32
11	HCV 2b	2	20	10	A_0201	LLGAPATPGI	17,74
12	HCV 2b	2	52	10	A_0201	SLSLaPLSEA	11,43
13	HCV 2b	2	45	9	B7	LPISWGTSLS	80
14	HCV 2b	2	13	9	B7	CPLAGLVLL	80
15	HCV 2b	2	62	9	B7	SPELWHTVL	24
16	HCV 2b	2	56	10	B7	APLSEASPEL	240
17	HCV 2b	2	6	10	B7	AVGQVGSCPL	60
18	HCV 2b	2	9	10	B7	QVGSCPLAGL	30
19	HCV 2b	2	61	10	B7	ASPELWHTVL	12
20	HCV 2b	2	45	9	B_3501	LPISWGTSLS	20
21	HCV 2b	2	13	9	B_3501	CPLAGLVLL	20
22	HCV 2b	2	56	10	B_3501	APLSEASPEL	20
23	HCV 2b	2	61	10	B_3501	ASPELWHTVL	10
24	HCV 2b	2	59	10	B_4403	SEASPELWHT	24
25	HCV 2b	2	1	10	B_4403	METRVAVGQV	18
26	HCV 2b	3	37	9	A1	ATTPLMIR	12,5
27	HCV 2b	3	53	9	A_0201	SLTQFSIFL	446,47
28	HCV 2b	3	11	9	A_0201	FLSSYLLFC	289,09
29	HCV 2b	3	9	9	A_0201	ALFLSSYLL	79,04
30	HCV 2b	3	4	9	A_0201	GIYPVALFL	51,7
31	HCV 2b	3	55	9	A_0201	TQFSIFLDV	49,57
32	HCV 2b	3	16	9	A_0201	LLFCRALQC	31,25
33	HCV 2b	3	35	9	A_0201	ALATTPIMI	10,43
34	HCV 2b	3	8	9	A_0201	VALFLSSYL	10,26
35	HCV 2b	3	15	10	A_0201	YLLFCRALQC	84,56
36	HCV 2b	3	27	10	A_0201	LQWKSGTSAL	30,56
37	HCV 2b	3	52	10	A_0201	SSLTQFSIFL	10,78
38	HCV 2b	3	14	9	A24	SYLLFCRAL	300
39	HCV 2b	3	10	9	A24	LFLSSYLLF	15
40	HCV 2b	3	3	10	A24	RGIYPVALFL	16,8
41	HCV 2b	3	5	10	A24	IYPVALFLSS	10,8
42	HCV 2b	3	21	10	A3	ALQCQCQLQWK	30
43	HCV 2b	3	9	10	A3	ALFLSSYLLF	20
44	HCV 2b	3	11	10	A3	FLSSYLLFCR	18
45	HCV 2b	3	69	10	A3	TMVPCAAGYK	13,5
46	HCV 2b	3	9	9	B7	ALFLSSYLL	12
47	HCV 2b	3	8	9	B7	VALFLSSYL	12
48	HCV 2b	3	1	10	B7	MQRGIYPVAL	40



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49	HCV 2b	3	18	10	B7	FCRALQCQCL	40
50	HCV 2b	3	8	10	B7	VALFLSSYLL	12
51	HCV 2b	3	18	10	B8	FCRALQCQCL	16
52	HCV 2b	3	49	9	B_3501	SPGSSLTQF	20
53	HCV 2b	3	6	10	B_3501	YPVALFLSSY	40
54	HCV 2b	3	33	10	B_3501	TSALATTPLM	10
55	HCV 2b	3	3	9	B_4403	RGIYPVALF	15
56	HCV 2b	4	17	9	A_0201	ALLASLSLV	591,89
57	HCV 2b	4	7	9	B7	PARQWAGPL	12
58	HCV 2b	4	16	9	B7	GALLASLSL	12
59	HCV 2b	4	11	9	B7	WAGPLGALL	12
60	HCV 2b	4	13	10	B7	GPLGALLASL	80
61	HCV 2b	4	2	10	B_3501	RPPIPPARGW	20
62	HCV 2b	4	13	10	B_3501	GPLGALLASL	20
63	HCV 2b	5	27	9	A_0201	CLPAVGWMI	78,25
64	HCV 2b	5	13	9	A_0201	FMPTNSTAL	70,97
65	HCV 2b	5	20	9	A_0201	ALAAPSVCL	21,36
66	HCV 2b	5	36	10	A_0201	FVSGGEPWNT	22,5
67	HCV 2b	5	13	10	A_0201	FMPTNSTALA	16,51
68	HCV 2b	5	12	10	A24	CFMPTNSTAL	36
69	HCV 2b	5	44	9	B7	NTRPTSPML	40
70	HCV 2b	5	20	9	B7	ALAAPSVCL	18
71	HCV 2b	5	23	9	B7	APSVCLPAV	12
72	HCV 2b	5	19	10	B7	TALAAPSVCL	18
73	HCV 2b	5	28	9	B_3501	LPAVGWMIF	20
74	HCV 2b	6				no hits	
75	HCV 2b	7				no hits	
76	HCV 2b	8	1	10	B7	MGRCGSSSFL	40
77	HCV 2b	9	43	10	A1	HVETSCMASR	18
78	HCV 2b	9	2	10	A1	TTSPPCQLGR	12,5
79	HCV 2b	9	16	9	A1	GTWRLPWSL	18,47
80	HCV 2b	9	8	10	A1	QLGRPRVCGT	17,14
81	HCV 2b	9	23	10	A1	SLSCSAQWRR	12
82	HCV 2b	9	11	10	B7	RPRVCGTWRL	800
83	HCV 2b	9	11	10	B_3501	RPRVCGTWRL	120
84	HCV 2b	9	44	10	B_4403	VETSCMASRF	60
85	HCV 2b	10				no hits	
86	HCV 2b	11	32	9	A_0201	GLVTRPWLA	37,26
87	HCV 2b	11	24	10	A24	GFSGrYITGL	20
88	HCV 2b	11	20	9	A3	HLFRGFSGR	60
89	HCV 2b	11	20	10	A3	HLFRGFSGRY	18
90	HCV 2b	11	51	10	B7	AQRGTSWDGL	120
91	HCV 2b	11	1	9	B_3501	MSRPGRSRF	15
92	HCV 2b	11	49	9	B_3501	TPAQRGTSW	10
93	HCV 2b	11	10	9	B_3501	CPPSHNPSW	10
94	HCV 2b	12	26	9	A_0201	ALGDTPWAC	152,77
95	HCV 2b	12	65	9	A_0201	FLTTRHQHQL	98,27
96	HCV 2b	12	58	9	A_0201	SLDGRPVFL	47
97	HCV 2b	12	47	9	A_0201	LLTSSRLNL	36,32
98	HCV 2b	12	76	9	A_0201	KLTRWATCT	26,08
99	HCV 2b	12	46	10	A_0201	NLLTSSRLNL	79,04
100	HCV 2b	12	58	10	A_0201	SLDGRPVFLT	39,76

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101	HCV 2b	12	65	10	A_0201	FLTTARHQLC	22,85
102	HCV 2b	12	57	10	A_0201	TSLDGRPVFL	11,64
103	HCV 2b	12	64	10	A24	VFLTTARHQL	30
104	HCV 2b	12	40	9	B7	APGVWPNLL	240
105	HCV 2b	12	19	9	B7	HPEDPCSAL	36
106	HCV 2b	12	4	9	B7	GVHCCRQGL	30
107	HCV 2b	12	96	9	B7	LPHIPVRGI	12
108	HCV 2b	12	39	9	B7	CAPGVWPNL	12
109	HCV 2b	12	88	9	B7	VAGRAPRSL	12
110	HCV 2b	12	92	10	B7	APRSLPHIPV	180
111	HCV 2b	12	68	10	B7	TARHQLCPKL	120
112	HCV 2b	12	44	10	B7	WPNLLTSSRL	80
113	HCV 2b	12	50	10	B7	SSRLNLSTSL	40
114	HCV 2b	12	87	10	B7	QVAGRAPRSL	20
115	HCV 2b	12	39	10	B7	CAPGVWPNLL	12
116	HCV 2b	12	68	10	B7	TARHQLCPKL	16
117	HCV 2b	12	74	10	B7	CPKLTRWATC	16
118	HCV 2b	12	40	9	B_3501	APGVWPNLL	20
119	HCV 2b	12	19	9	B_3501	HPEDPCSAL	12
120	HCV 2b	12	57	9	B_3501	TSLDGRPVF	10
121	HCV 2b	12	44	10	B_3501	WPNLLTSSRL	20
122	HCV 2b	12	50	10	B_3501	SSRLNLSTSL	15
123	HCV 2b	12	92	10	B_3501	APRSLPHIPV	12
124	HCV 2b	12	57	10	B_3501	TSLDGRPVFL	10
125	HCV 2b	12	35	9	B_4403	SERPCAPGV	24
126	HCV 2b	12	35	10	B_4403	SERPCAPGVW	72
127	HCV 2b	13	33	10	A1	ASEQSLTRLR	13,5
128	HCV 2b	13	37	9	A_0201	SLTRLRPQV	69,55
129	HCV 2b	13	24	9	A_0201	IQWTLPPSL	30,56
130	HCV 2b	13	38	9	B7	LTRLRPQVL	40
131	HCV 2b	13	13	9	B7	APMISSAT	18
132	HCV 2b	13	20	9	B7	ATSAIQWTL	12
133	HCV 2b	13	19	11	B7	SATSAAIQWTL	12
134	HCV 2b	13	23	10	B7	AIQWTLPPSL	12
135	HCV 2b	13	32	10	B7	LASEQSLTRL	12
136	HCV 2b	13	38	9	B8	LTRLRPQVL	80
137	HCV 2b	13	42	9	B_3501	RPQVLGWWF	40
138	HCV 2b	13	7	10	B_4403	MEAAQPAPMI	12
139	HCV 2b	14	5	9	A_0201	SLFMARLSL	79,04
140	HCV 2b	14	4	10	A24	RSLFMARLSL	12
141	HCV 2b	14	2	10	B7	RARSLFMARL	120
142	HCV 2b	14	2	10	B_3501	RARSLFMARL	18
143	HCV 2b	14	4	10	B_3501	RSLFMARLSL	10
144	HCV 2b	15	12	9	A_0201	SMPSPTTGV	50,23
145	HCV 2b	15	3	9	A_0201	SQQPFGAWA	10,53
146	HCV 2b	15	5	9	B7	QPFGAWASM	20
147	HCV 2b	15	19	10	B7	GVSTsPLYQL	30
148	HCV 2b	15	5	9	B_3501	QPFGAWASM	40
149	HCV 2b	16				no hits	
150	HCV 2b	17	1	10	A_0201	MMPGQLGTSL	26,23
151	HCV 2b	17	2	9	B7	MPGQLGTSL	80
152	HCV 2b	17	2	9	B_3501	MPGQLGTSL	20

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153	HCV 2b	18	5	10	B7	SPRRSKEEIT	20
154	HCV 2b	18	5	10	B7	SPRRSKEEIT	16
155	HCV 2b	18	5	9	B_3501	SPRRSKEEI	24
156	HCV 2b	18	8	10	B_3501	RSKEEITLRI	24
157	HCV 2b	18	5	9	B7	SPRRSKEEI	80.000
158	HCV 2b	19	17	10	A3	LMRWkNAPPK	20
159	HCV 2b	19	4	10	A3	WLWPlTRKSY	15
160	HCV 2b	19	29	10	A3	SLRKSGSWRR	12
161	HCV 2b	19	6	9	B7	WPLTRKSYM	20
162	HCV 2b	19	22	9	B7	NAPPKPPSL	12
163	HCV 2b	19	8	10	B7	LTRKsYMRPL	40
164	HCV 2b	19	22	9	B8	NAPPKPPSL	16
165	HCV 2b	19	6	9	B_3501	WPLTRKSYM	40
166	HCV 2b	20	4	9	A_0201	LLTTWRSLT	12,67
167	HCV 2b	20	2	10	B7	LPLLTWRSL	80
168	HCV 2b	20	2	10	B_3501	LPLLtTWRS	20
169	HCV 2b	21	6	10	A_0201	WMPTfSWEAM	13.748
170	HCV 2b	21	6	9	A_0201	WMPTFSWEA	470.387
171	HCV 2b	21	7	9	B7	MPTFSWEAM	20.000
172	HCV 2b	21	7	9	B_3501	MPTFSWEAM	40.000
173	HCV 2b	22				no hits	
174	HCV 2b	23	70	9	A1	QRDPLPLFR	12.500
175	HCV 2b	23	91	9	A_0201	GLQSPIKRI	23.995
176	HCV 2b	23	100	9	A_0201	LLSAAPCHT	12.668
177	HCV 2b	23	8	9	A24	RWQTKCSAL	12.000
178	HCV 2b	23	18	10	A24	KTPMtPVTPL	12.000
179	HCV 2b	23	19	9	B7	TPMTPVTPL	360.000
180	HCV 2b	23	80	9	B7	SVRSSTRTL	200.000
181	HCV 2b	23	84	9	B7	STRTLsrGL	40.000
182	HCV 2b	23	35	9	B7	ASSSPLARL	18.000
183	HCV 2b	23	22	9	B7	TPVTPLGRI	12.000
184	HCV 2b	23	55	10	B7	LPLRgSRGTL	120.000
185	HCV 2b	23	46	10	B7	QMRDhCPPCL	40.000
186	HCV 2b	23	59	10	B7	GSRGtLTWSL	40.000
187	HCV 2b	23	76	10	B7	LPRGsVRSST	30.000
188	HCV 2b	23	38	10	B7	SPLArLPLQM	20.000
189	HCV 2b	23	34	10	B7	TASSsPLARL	18.000
190	HCV 2b	23	19	9	B8	TPMTPVTPL	20.000
191	HCV 2b	23	13	9	B8	CSALSKTPM	10.000
192	HCV 2b	23	38	10	B8	SPLArLPLQM	40.000
193	HCV 2b	23	55	10	B8	LPLRgSRGTL	20.000
194	HCV 2b	23	59	10	B8	GSRGtLTWSL	15.000
195	HCV 2b	24	7	9	A_0201	TLsGLPLRL	21.362
196	HCV 2b	24	7	10	A_0201	TLsGLPLRLV	31.994
197	HCV 2b	24	6	10	A24	RTLSgLPLRL	14.400
198	HCV 2b	24	4	10	B7	SCRTISGLPL	40.000
199	HCV 2b	24	4	10	B8	SCRTISGLPL	16.000
200	HCV 2b	25	11	9	B_4403	AEKSQLASS	12.000
201	HCV 2b	25	11	10	B_4403	AEKSqLASSY	360.000
202	HCV 2b	26	11	10	A_0201	SIFSSKLGEV	10.580
203	HCV 2b	27	21	9	A_0201	RLSGNLERL	24.075
204	HCV 2b	27	4	9	B7	TPSHCTHTL	80.000

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205	HCV 2b	27	4	9	B_3501	TPSHCTHTL	20.000
206	HCV 2b	27	31	9	B_4403	LERGRVGRV	18.000
207	HCV 2b	28	1	9	A1	MPDPAYYSF	25
208	HCV 2b	28	6	9	A24	YYSFAYSYL	200
209	HCV 2b	28	5	10	A24	AYYSfAYSYL	200
210	HCV 2b	28	3	9	B_3501	DPAYYSFAY	40
211	HCV 2b	28	3	9	B_4403	DPAYYSFAY	27
212	HCV 2b	29				no hits	
213	HCV 2b	30				no hits	
214	HCV 2b	31	4	9	A1	DAELVTNSY	45
215	HCV 2b	31	41	9	A_0201	GLFLHAGSV	33,46
216	HCV 2b	31	37	10	A_0201	GIWLGLFLHA	10,77
217	HCV 2b	31	32	9	A24	RPLGCGIWL	12
218	HCV 2b	31	32	9	B7	RPLGCGIWL	80
219	HCV 2b	31	25	10	B7	GPGNCLRRPL	120
220	HCV 2b	31	21	10	B7	CSRVGPGNCL	60.000
221	HCV 2b	31	14	9	B8	DPRLRCSCS	16
222	HCV 2b	31	32	9	B_3501	RPLGCGIWL	40
223	HCV 2b	31	25	10	B_3501	GPGNcLRRPL	20
224	HCV 2b	31	21	10	B_3501	CSRVGPGNCL	15
225	HCV 2b	31	4	9	B_4403	DAELVTNSY	20,25
226	HCV 2b	31	3	10	B_4403	HDDELVTNSY	67,5
227	HCV 2b	32	2	9	A24	RYRPSSVGL	480
228	HCV 2b	32	9	9	A3	GLRAGLLLY	36
229	HCV 2b	32	7	9	B7	SVGLRAGLL	20
230	HCV 2b	32	7	10	B7	SVGLRAGLLL	20
231	HCV 2b	33				no hits	
232	HCV 2b	34				no hits	
233	HCV 2b	35				no hits	
234	HCV 2b	36	41	9	A_0201	GMGGPPFPV	291,35
235	HCV 2b	36	1	9	A_0201	MLLLRPTGT	46,87
236	HCV 2b	36	40	10	A_0201	VGMGgPPFPV	16,56
237	HCV 2b	36	33	10	A24	CYEIHRKVGM	37,5
238	HCV 2b	36	50	9	B7	AGRRQDLCLM	30
239	HCV 2b	36	47	10	B7	FPVAGRQDL	120
240	HCV 2b	36	17	9	B_3501	SPKHRGRAV	12
241	HCV 2b	36	25	10	B_3501	VPLWtFSSCY	40
242	HCV 2b	36	34	9	B_4403	YEIHRKVGM	20
243	HCV 2b	37				no hits	
244	HCV 2b	38				no hits	
245	HCV 2b	39	14	9	A_0201	LLPGDRLHL	36,32
246	HCV 2b	39	13	10	A_0201	SLLPGDRLHL	79,04
247	HCV 2b	39	19	10	A_0201	RLHLHHWPHT	12,67
248	HCV 2b	39	7	9	B7	GASRRGSLL	12
249	HCV 2b	39	7	9	B8	GASRRGSLL	16
250	HCV 2b	40				no hits	
251	HCV 2b	41	7	9	A_0201	ILGQTHVEL	36,32
252	HCV 2b	41	13	9	A_0201	VELHQWHTV	14,46
253	HCV 2b	41	6	10	A_0201	TILGqTHVEL	10,87
254	HCV 2b	41	20	9	B7	TVPGGTLHL	20
255	HCV 2b	41	31	10	B_3501	KSRSGINDGF	30
256	HCV 2b	42	33	9	A_0201	QLLHRRALC	18,38

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257	HCV 2b	42	33	10	A_0201	QLLHRRALCA	18,38
258	HCV 2b	42	29	9	A3	NLPHQLLHR	12
259	HCV 2b	42	34	10	A3	LLHRRALCAK	30
260	HCV 2b	42	22	9	B7	LPKHVAGNL	80
261	HCV 2b	42	27	9	B7	AGNLPHQLL	18
262	HCV 2b	42	26	9	B7	VAGNLPHQL	12
263	HCV 2b	42	25	10	B7	HVAGnLPHQL	20
264	HCV 2b	42	26	10	B7	VAGNLPHQLL	18
265	HCV 2b	42	22	9	B8	LPKHVAGNL	16
266	HCV 2b	42	22	9	B8	LPKHVAGNL	60
267	HCV 2b	42	2	10	B_3501	RSKH1GPRPL	30
268	HCV 2b	43	33	9	A_0201	QLLHRRALC	18,38
269	HCV 2b	43	33	10	A_0201	QLLHrRALCA	18,38
270	HCV 2b	43	29	9	A3	NLPHQLLHR	12
271	HCV 2b	43	34	10	A3	LLHRRALCAK	30
272	HCV 2b	43	22	9	B7	LPKHVAGNL	80
273	HCV 2b	43	27	9	B7	AGNLPHQLL	18
274	HCV 2b	43	26	9	B7	VAGNLPHQL	12
275	HCV 2b	43	25	10	B7	HVAGnLPHQL	20
276	HCV 2b	43	26	10	B7	VAGNLPHQLL	18
277	HCV 2b	43	22	9	B8	LPKHVAGNL	16
278	HCV 2b	43	22	9	B_3501	LPKHVAGNL	60
279	HCV 2b	43	2	10	B_3501	RSKH1GPRPL	30
280	HCV 2b	44				no hits	
281	HCV 2b	45	2	10	B7	SVVQpPGPPL	30
282	HCV 2b	45	3	9	B7	VVQPPGPPL	30

Table 4h  
2b (4-6)

No.	Strain	ORF	Start	AA	HLA	Peptide sequence	Score
1	HCV 2b	1	2	9	A_0201	RLTDLSQLA	20.369
2	HCV 2b	1	15	10	A1	KMEPPpRKEEK	90.000
3	HCV 2b	1	2	10	A_0201	RLTDLSQLAV	285.163
4	HCV 2b	1	15	10	A3	KMEPPpRKEEK	90.000
5	HCV 2b	2	13	9	A_0201	FQLWPAGLV	15.603
6	HCV 2b	2	7	9	A_0201	RQAHVAFQL	12.562
7	HCV 2b	2	12	9	A24	AFQLWPAGL	30.000
8	HCV 2b	2	7	9	A24	RQAHVAFQL	11.200
9	HCV 2b	2	3	9	B8	AMRRRQAHV	12.000
10	HCV 2b	3				no hits	
11	HCV 2b	4				no hits	
12	HCV 2b	5	21	9	A24	TFSSWSSTL	20.000
13	HCV 2b	5	55	9	A24	RTQFGSHRL	12.000
14	HCV 2b	5	22	9	B_3501	FSSWSSTLM	10.000
15	HCV 2b	5	50	9	B_3501	RSPWSRTQF	10.000
16	HCV 2b	5	17	9	B_3501	VPVCTFSSW	10.000
17	HCV 2b	5	14	9	B_4403	REVVPVGTF	240.000
18	HCV 2b	5	1	10	B7	MSRSqEGCSL	40.000
19	HCV 2b	5	12	10	B7	GPREVVPVGT	20.000
20	HCV 2b	5	30	10	B7	MVQKaHDHPL	20.000
21	HCV 2b	5	1	10	B_3501	MSRSqEGCSL	22.500
22	HCV 2b	5	12	10	B_3501	GPREVVPVGT	12.000
23	HCV 2b	5	14	10	B_4403	REVVPVGTF	18.000
24	HCV 2b	6				no hits	
25	HCV 2b	7	1	10	B_3501	MPLRgFPVRW	10.000
26	HCV 2b	8	13	9	A_0201	VLWPVVGGL	90.126
27	HCV 2b	8	5	9	A_0201	WLAVCPGPV	41.592
28	HCV 2b	8	6	9	B7	LAVCPGPVL	18.000
29	HCV 2b	8	13	10	A_0201	VLWPvVGGLV	127.579
30	HCV 2b	8	5	10	A_0201	WLAVcPGPVL	40.289
31	HCV 2b	8	8	10	A_0201	VCPGpVLWPV	13.314
32	HCV 2b	9	10	9	B7	APSQFSLYV	12.000
33	HCV 2b	9	9	10	A_0201	IAPSQFSLYV	34.322
34	HCV 2b	9	7	10	B7	CPIApSQFSL	80.000
35	HCV 2b	9	7	10	B_3501	CPIApSQFSL	20.000
36	HCV 2b	10	10	9	A24	RYLSVRAGS	21.000
37	HCV 2b	10	26	9	A3	QLVACCQK	30.000
38	HCV 2b	10	4	9	B7	GPWCSSRYL	80.000
39	HCV 2b	10	4	9	B_3501	GPWCSSRYL	20.000
40	HCV 2b	10	18	10	B7	SPPGkFGAQL	80.000
41	HCV 2b	10	18	10	B_3501	SPPGkFGAQL	20.000
42	HCV 2b	11				no hits	
43	HCV 2b	12				no hits	
44	HCV 2b	13				no hits	
45	HCV 2b	14	2	9	B7	WPRGPLCPL	1.200.000
46	HCV 2b	14	2	9	B8	WPRGPLCPL	16.000
47	HCV 2b	14	2	9	B_3501	WPRGPLCPL	60.000
48	HCV 2b	15				no hits	

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49	HCV 2b	16	20	9	A24	PYLPICSGL	50.400
50	HCV 2b	16	11	9	B_3501	AAVDSADPY	12.000
51	HCV 2b	16	14	9	B_3501	DSADPYPYL	10.000
52	HCV 2b	16	11	9	B_4403	AAVDSADPY	18.000
53	HCV 2b	16	13	9	B_4403	VDSADPYPY	15.000
54	HCV 2b	16	12	10	A1	AVDSaDPYPY	50.000
55	HCV 2b	16	15	10	A1	SADPYFYLPFI	25.000
56	HCV 2b	16	21	10	A_0201	YLPicSGLRV	319.939
57	HCV 2b	16	19	10	B7	YPYLPICSGL	80.000
58	HCV 2b	16	19	10	B_3501	YPYLPICSGL	20.000
59	HCV 2b	16	10	10	B_4403	SAAVdsADPY	18.000
60	HCV 2b	17	2	10	B7	LQRIyAPPPL	40.000
61	HCV 2b	18	3	9	B7	NATVCKGSL	12.000
62	HCV 2b	18	10	10	A3	SLSGtWGSTR	18.000
63	HCV 2b	19	6	9	B7	NASSTASCL	12.000
64	HCV 2b	20				no hits	
65	HCV 2b	21	8	9	A1	GLEAVRHSY	45.000
66	HCV 2b	21	8	9	A3	GLEAVRHSY	18.000
67	HCV 2b	21	1	9	B7	MALPGGGGL	12.000
68	HCV 2b	22	2	10	B7	ICREtSYGTL	40.000
69	HCV 2b	22	2	10	B8	ICREtSYGTL	24.000
70	HCV 2b	23				no hits	
71	HCV 2b	24	24	9	A_0201	VSLSFVFTA	10.340
72	HCV 2b	24	18	9	B7	LASGNGVSL	12.000
73	HCV 2b	24	25	10	A_0201	SLSFvFTAQL	81.177
74	HCV 2b	24	23	10	A_0201	GVSLsFVFTA	22.036
75	HCV 2b	24	17	10	A_0201	RLASgNGVSL	21.362
76	HCV 2b	25	100	9	A_0201	WMMLPSQEL	262.591
77	HCV 2b	25	88	9	A_0201	IMTIRTQIV	35.012
78	HCV 2b	25	51	9	A_0201	IMAGRSSGL	26.228
79	HCV 2b	25	168	9	A_0201	YLVIASVKA	22.853
80	HCV 2b	25	101	9	A_0201	MMLPSQELT	16.588
81	HCV 2b	25	121	9	A_0201	VIGVVGSLV	16.258
82	HCV 2b	25	116	9	A_0201	SQAARVIGV	16.219
83	HCV 2b	25	68	9	A_0201	SKLRFWFRV	13.392
84	HCV 2b	25	120	9	A24	RVIGVVGSL	16.800
85	HCV 2b	25	161	9	A24	RSPGGAEYL	12.000
86	HCV 2b	25	131	9	A24	KYRRRPRES	11.000
87	HCV 2b	25	58	9	A3	GLTEYTAPY	54.000
88	HCV 2b	25	123	9	A3	GVVGS LVKK	20.250
89	HCV 2b	25	208	9	B7	AALHAARAL	36.000
90	HCV 2b	25	120	9	B7	RVIGVVGSL	20.000
91	HCV 2b	25	95	9	B7	IVGAYWML	20.000
92	HCV 2b	25	169	9	B7	LVIASVKAL	20.000
93	HCV 2b	25	4	9	B7	EALTARARL	18.000
94	HCV 2b	25	100	9	B7	WMMLPSQEL	18.000
95	HCV 2b	25	7	9	B8	TARARLFHA	16.000
96	HCV 2b	25	64	9	B_3501	APYISKLRF	20.000
97	HCV 2b	25	180	9	B_3501	RSSSSLPWL	10.000
98	HCV 2b	25	161	9	B_3501	RSPGGAEYL	10.000
99	HCV 2b	25	183	9	B_3501	SSLPWLSEM	10.000
100	HCV 2b	25	44	9	B_3501	SSPCSLSIM	10.000

101	HCV 2b	25	137	9	B_4403	RESSATDTF	90.000
102	HCV 2b	25	148	9	B_4403	QDVISSKSY	67.500
103	HCV 2b	25	82	9	B_4403	MEKKWVIMT	12.000
104	HCV 2b	25	166	9	B_4403	AEYLVIASV	12.000
105	HCV 2b	25	110	9	B_4403	GECLTVSQA	12.000
106	HCV 2b	25	145	9	B_4403	FEEQDVISS	12.000
107	HCV 2b	25	2	10	A1	MSEALTARAR	13.500
108	HCV 2b	25	58	10	A_0201	GLTEyTAPYI	235.260
109	HCV 2b	25	168	10	A_0201	YLVLaSVKAL	226.014
110	HCV 2b	25	112	10	A_0201	CLTVsQAARV	69.552
111	HCV 2b	25	100	10	A_0201	WMMLpSQELT	44.885
112	HCV 2b	25	1	10	A_0201	MMSEaLTARA	25.008
113	HCV 2b	25	87	10	A_0201	VIMTiRTQIV	24.663
114	HCV 2b	25	78	10	A_0201	WASSMeKKWV	24.440
115	HCV 2b	25	50	10	A_0201	SIMAgRSSGL	10.868
116	HCV 2b	25	61	10	A24	EYTApyISKL	220.000
117	HCV 2b	25	65	10	A24	PYISKLRFWF	18.000
118	HCV 2b	25	131	10	A24	KYRRrPRESS	10.000
119	HCV 2b	25	176	10	B7	ALRFRSSSSL	120.000
120	HCV 2b	25	15	10	B7	ALRGgAPSFL	120.000
121	HCV 2b	25	7	10	B7	TARArLFHAL	120.000
122	HCV 2b	25	201	10	B7	IVGStIPAAL	20.000
123	HCV 2b	25	135	10	B7	RPRESaTDT	20.000
124	HCV 2b	25	208	10	B7	AALHaARALM	13.500
125	HCV 2b	25	50	10	B7	SIMAgRSSGL	12.000
126	HCV 2b	25	7	10	B8	TARArLFHAL	16.000
127	HCV 2b	25	135	10	B_3501	RPRESaTDT	24.000
128	HCV 2b	25	80	10	B_3501	SSMEkKWVIM	20.000
129	HCV 2b	25	28	10	B_3501	ATRESsWGEY	12.000
130	HCV 2b	25	162	10	B_3501	SPGGaEYLVI	12.000
131	HCV 2b	25	64	10	B_3501	APYIsKLRFW	10.000
132	HCV 2b	25	182	10	B_3501	SSSLpWLSEM	10.000
133	HCV 2b	25	43	10	B_3501	ASSPcSLSIM	10.000
134	HCV 2b	25	3	10	B_4403	SEALtARARL	24.000
135	HCV 2b	25	57	10	B_4403	SGLTeYTAPY	18.000
136	HCV 2b	25	53	10	B_4403	AGRSsGLTEY	13.500
137	HCV 2b	26	9	9	A24	KTPLARQRL	14.400
138	HCV 2b	26	1	9	A3	MVFPMLLVK	22.500
139	HCV 2b	26	5	10	A3	MLVVkTPLAR	12.000
140	HCV 2b	26	3	10	B7	FPMLvVKTPL	240.000
141	HCV 2b	26	3	10	B_3501	FPMLvVKTPL	20.000
142	HCV 2b	27	5	9	A_0201	VLMSLSVTV	437.482
143	HCV 2b	27	21	9	A_0201	YENPIGSFL	10.509
144	HCV 2b	27	20	9	A24	SYENPIGSF	150.000
145	HCV 2b	27	8	9	A3	SLSVTVESK	60.000
146	HCV 2b	27	28	9	A3	FLLPQALRR	18.000
147	HCV 2b	27	37	9	B_3501	KSTRSAGEY	20.000
148	HCV 2b	27	13	9	B_4403	VESKQRVSY	120.000
149	HCV 2b	27	12	10	A1	TVESkQRVSY	90.000
150	HCV 2b	27	4	10	A_0201	SVLMsLSVTV	22.517
151	HCV 2b	27	21	10	A_0201	YENPIGSFLL	11.082
152	HCV 2b	27	20	10	A24	SYENpIGSFL	420.000



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153	HCV 2b	27	19	10	B_3501	VSYEnPIGSF	10.000
154	HCV 2b	27	21	10	B_4403	YENPiGSFLL	12.000
155	HCV 2b	28	43	9	A_0201	WLTAPLDKL	110.747
156	HCV 2b	28	19	9	A_0201	FLAMAVVSI	110.379
157	HCV 2b	28	21	9	A_0201	AMAVVSIGV	50.232
158	HCV 2b	28	81	9	A_0201	ALTLEAARL	21.362
159	HCV 2b	28	6	9	A24	FFPPLAGSI	10.800
160	HCV 2b	28	55	9	B7	FAPNPYRDL	18.000
161	HCV 2b	28	72	9	B7	QASSTERSL	12.000
162	HCV 2b	28	81	9	B7	ALTLEAARL	12.000
163	HCV 2b	28	58	9	B_3501	NPYRDLAEW	15.000
164	HCV 2b	28	74	9	B_3501	SSTERSLAL	10.000
165	HCV 2b	28	84	9	B_4403	LEAARLTSC	18.000
166	HCV 2b	28	54	10	A24	SFAPnPYRDL	24.000
167	HCV 2b	28	41	10	A3	RMWLtAPLDK	200.000
168	HCV 2b	28	71	10	B7	AQASsTERS	12.000
169	HCV 2b	28	11	10	B7	AGSIqNTSFL	12.000
170	HCV 2b	28	80	10	B7	LALTLEAARL	12.000
171	HCV 2b	28	73	10	B7	ASSTeRSLAL	12.000
172	HCV 2b	28	46	10	B_3501	APLDKlRTSF	40.000
173	HCV 2b	28	35	10	B_3501	RSSHtDRMWL	15.000
174	HCV 2b	28	64	10	B_4403	AEWGgVNAQA	18.000
175	HCV 2b	29	2	9	B_3501	RAPVQEYDM	12.000
176	HCV 2b	30	5	9	B7	SPSEGGADL	80.000
177	HCV 2b	30	5	9	B_3501	SPSEGGADL	40.000
178	HCV 2b	30	42	9	B_3501	VSPEGCWTL	10.000
179	HCV 2b	30	33	10	A1	DSDPaSEAAV	15.000
180	HCV 2b	30	49	10	A_0201	TLSPpVSAPV	69.552
181	HCV 2b	30	41	10	A_0201	AVSPeGCWTL	14.019
182	HCV 2b	30	41	10	B7	AVSPeGCWTL	60.000
183	HCV 2b	30	22	10	B7	SPGSpSRGGM	30.000
184	HCV 2b	30	22	10	B_3501	SPGSpSRGGM	40.000
185	HCV 2b	30	7	10	B_4403	SEGGaDLAGS	18.000
186	HCV 2b	30	38	10	B_4403	SEAAvSPEGC	16.000
187	HCV 2b	31	74	9	A_0201	VMWDGSVMN	207.569
188	HCV 2b	31	31	9	A_0201	SQSYAVLWV	89.205
189	HCV 2b	31	80	9	A_0201	VNMEANTSV	11.709
190	HCV 2b	31	32	9	A_0201	QSYAVLVVV	10.275
191	HCV 2b	31	34	9	A_0201	YAVLVVVQV	10.220
192	HCV 2b	31	36	9	A3	VLWVVQVAF	15.000
193	HCV 2b	31	56	9	B7	LACEGGDPL	12.000
194	HCV 2b	31	15	9	B7	SIRVTSPPM	10.000
195	HCV 2b	31	31	10	A_0201	SQSYaVLWVV	49.874
196	HCV 2b	31	9	10	A_0201	ITLEsDSIRV	24.912
197	HCV 2b	31	43	10	A24	AFKDGADSWL	24.000
198	HCV 2b	31	36	10	A3	VLWVvQVAFK	300.000
199	HCV 2b	31	73	10	B7	AVMWdGSVMN	45.000
200	HCV 2b	31	2	10	B7	ESREsRTITL	40.000
201	HCV 2b	31	17	10	B7	RVTSpPMKRL	30.000
202	HCV 2b	31	28	10	B7	STMSqSYAVL	12.000
203	HCV 2b	31	2	10	B8	ESREsRTITL	240.000
204	HCV 2b	31	2	10	B_3501	ESREsRTITL	30.000

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205	HCV 2b	31	14	10	B_3501	DSIRvTSPPM	10.000
206	HCV 2b	32	103	9	A_0201	SLLSKLIVV	242.674
207	HCV 2b	32	110	9	A_0201	IVSELNtCV	42.418
208	HCV 2b	32	11	9	A_0201	QVFGpVIFM	20.346
209	HCV 2b	32	30	9	B7	APHEHRVVM	90.000
210	HCV 2b	32	39	9	B7	TPVPAHTPL	80.000
211	HCV 2b	32	20	9	B7	VPKRTWPtEM	20.000
212	HCV 2b	32	97	9	B7	SVIQACSLl	20.000
213	HCV 2b	32	100	9	B7	QACSLLSKL	12.000
214	HCV 2b	32	53	9	B8	EMKGRPGIL	160.000
215	HCV 2b	32	20	9	B_3501	VPKRTWPtEM	120.000
216	HCV 2b	32	30	9	B_3501	APHEHRVVM	80.000
217	HCV 2b	32	57	9	B_3501	RPGLGSNF	40.000
218	HCV 2b	32	39	9	B_3501	TPVPAHTPL	20.000
219	HCV 2b	32	111	10	A1	VSELnTCVTR	27.000
220	HCV 2b	32	11	10	A_0201	QVFGpVIFMV	300.383
221	HCV 2b	32	107	10	A_0201	KLVIvSELNT	26.082
222	HCV 2b	32	109	10	A_0201	VIVSeLNTCV	16.258
223	HCV 2b	32	65	10	A_0201	FADSqFLKSV	15.535
224	HCV 2b	32	27	10	A_0201	EMFAPHEHRV	13.939
225	HCV 2b	32	46	10	A3	PLYpFWQEMK	45.000
226	HCV 2b	32	45	10	B7	TPLYpFWQEM	20.000
227	HCV 2b	32	20	10	B_3501	VPKRTWPtEMF	60.000
228	HCV 2b	32	45	10	B_3501	TPLYpFWQEM	40.000
229	HCV 2b	32	39	10	B_3501	TPVPAHTPLY	40.000
230	HCV 2b	32	41	10	B_3501	VPAHtPLYPF	20.000
231	HCV 2b	32	4	10	B_3501	VPCHmFRQVF	20.000
232	HCV 2b	32	105	10	B_3501	LSKLvIVSEL	15.000
233	HCV 2b	32	67	10	B_3501	DSQFLKSVRM	10.000
234	HCV 2b	32	112	10	B_4403	SELNtCVTRS	72.000
235	HCV 2b	32	39	10	B_4403	TPVPAHTPLY	18.000
236	HCV 2b	33	86	9	A_0201	MMFKRMVVL	91.513
237	HCV 2b	33	147	9	A_0201	CMAGCMSWA	45.388
238	HCV 2b	33	51	9	A_0201	ILRPILPT	29.137
239	HCV 2b	33	125	9	A_0201	CMPLMKFHM	20.810
240	HCV 2b	33	11	9	A_0201	KIAGRREFTT	20.800
241	HCV 2b	33	166	9	A_0201	ILDLSISAI	16.317
242	HCV 2b	33	165	9	A_0201	SILDLSISA	10.363
243	HCV 2b	33	123	9	A24	RYCMLMKF	220.000
244	HCV 2b	33	176	9	B7	CPSSMRAAL	120.000
245	HCV 2b	33	120	9	B7	SPARYCMPL	80.000
246	HCV 2b	33	91	9	B7	MVVLVGSGL	20.000
247	HCV 2b	33	52	9	B7	LPRPILPTA	20.000
248	HCV 2b	33	83	9	B7	HPPMMFKRM	20.000
249	HCV 2b	33	44	9	B7	PARTSTNIL	12.000
250	HCV 2b	33	159	9	B7	ACCRRPSIL	12.000
251	HCV 2b	33	159	9	B8	ACCRRPSIL	16.000
252	HCV 2b	33	83	9	B_3501	HPPMMFKRM	40.000
253	HCV 2b	33	35	9	B_3501	RAPEMPAPY	24.000
254	HCV 2b	33	120	9	B_3501	SPARYCMPL	20.000
255	HCV 2b	33	176	9	B_3501	CPSSMRAAL	20.000
256	HCV 2b	33	163	9	B_3501	RPSILDLSI	16.000

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257	HCV 2b	33	20	9	B_3501	SSTEGFSPL	10.000
258	HCV 2b	33	188	9	B_3501	SSISSKASY	10.000
259	HCV 2b	33	188	9	B_4403	SSISSKASY	30.000
260	HCV 2b	33	118	9	B_4403	VESPARYCM	12.000
261	HCV 2b	33	9	9	B_4403	GDKIAGRRF	11.250
262	HCV 2b	33	21	10	A1	STEGfSPLMI	11.250
263	HCV 2b	33	166	10	A1	ILDLSISAIR	10.000
264	HCV 2b	33	86	10	A_0201	NMFKrMVVLV	726.706
265	HCV 2b	33	165	10	A_0201	SILDLSISAI	50.051
266	HCV 2b	33	147	10	A_0201	CMAGcMSWAC	26.910
267	HCV 2b	33	98	10	A_0201	GLVNaALKAI	23.995
268	HCV 2b	33	77	10	A_0201	AIWEaNHPPM	23.246
269	HCV 2b	33	51	10	A_0201	ILPRpILPTA	19.425
270	HCV 2b	33	93	10	A_0201	VLVGsGLVNA	19.425
271	HCV 2b	33	90	10	A_0201	RMVVlVGSGL	15.428
272	HCV 2b	33	16	10	A24	RFTTsSTEGF	20.000
273	HCV 2b	33	90	10	A24	RMVVlVGSGL	16.800
274	HCV 2b	33	175	10	A24	RCPSsMRAAL	12.000
275	HCV 2b	33	57	10	B7	LPTAaPTRPL	120.000
276	HCV 2b	33	126	10	B7	MPLMkFHMCL	80.000
277	HCV 2b	33	43	10	B7	YPARtSTNIL	80.000
278	HCV 2b	33	160	10	B7	CCRRpSILDL	40.000
279	HCV 2b	33	52	10	B7	LPRPiLPTAA	20.000
280	HCV 2b	33	120	10	B7	SPARyCMPLM	20.000
281	HCV 2b	33	158	10	B7	VACCrRPSIL	12.000
282	HCV 2b	33	30	10	B8	ILKAtRAPEM	40.000
283	HCV 2b	33	158	10	B8	VACCrRPSIL	16.000
284	HCV 2b	33	160	10	B8	CCRRpSILDL	16.000
285	HCV 2b	33	120	10	B_3501	SPARyCMPLM	40.000
286	HCV 2b	33	43	10	B_3501	YPARtSTNIL	20.000
287	HCV 2b	33	57	10	B_3501	LPTAaPTRPL	20.000
288	HCV 2b	33	126	10	B_3501	MPLMkFHMCL	20.000
289	HCV 2b	33	20	10	B_3501	SSTEGFSPLM	20.000
290	HCV 2b	33	69	10	B_3501	KPVApAGGAI	16.000
291	HCV 2b	33	191	10	B_3501	SSKAsYKISL	15.000
292	HCV 2b	33	139	10	B_3501	CSILgHDDCM	10.000
293	HCV 2b	33	171	10	B_3501	ISAIrCPSSM	10.000
294	HCV 2b	33	187	10	B_3501	HSSIsSKASY	10.000
295	HCV 2b	33	79	10	B_4403	WEANhPPMMF	80.000
296	HCV 2b	33	105	10	B_4403	KAIIdATAGF	16.875
297	HCV 2b	34	2	9	B7	RPMMEMQPV	12.000
298	HCV 2b	34	2	9	B_3501	RPMMEMQPV	12.000
299	HCV 2b	35	7	9	A_0201	CMHVAIYFV	635.435
300	HCV 2b	35	11	9	A_0201	AIYFVTGWV	21.881
301	HCV 2b	35	30	9	A24	RYRRGVGPV	10.000
302	HCV 2b	35	36	9	B7	GPVSVGFSL	80.000
303	HCV 2b	35	27	9	B7	APKRYRRGV	18.000
304	HCV 2b	35	36	9	B_3501	GPVSVGFSL	20.000
305	HCV 2b	35	27	9	B_3501	APKRYRRGV	12.000
306	HCV 2b	35	51	9	B_3501	TSHEGGGAF	10.000
307	HCV 2b	35	6	10	A_0201	ACMHvAIYFV	21.250
308	HCV 2b	35	7	10	A_0201	CMHVaIYFVT	19.198

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309	HCV 2b	35	30	10	A24	RYRRgVGPVS	14.000
310	HCV 2b	35	4	10	B_3501	RSACmHVAIY	20.000
311	HCV 2b	35	22	10	B_3501	ISLVtAPKRY	10.000
312	HCV 2b	35	4	10	B_4403	RSACmHVAIY	18.000
313	HCV 2b	35	22	10	B_4403	ISLVtAPKRY	13.500
314	HCV 2b	36				no hits	
315	HCV 2b	37				no hits	
316	HCV 2b	38	1	9	A1	MTEskSPVY	225.000
317	HCV 2b	38	8	9	A24	VYPVIRASV	10.500
318	HCV 2b	38	2	10	B_4403	TESKsPVYPV	12.000
319	HCV 2b	39	18	9	B7	NIRCLPPLM	10.000
320	HCV 2b	39	16	10	A_0201	WQNIrCLPPL	22.915
321	HCV 2b	39	13	10	A24	FFEWqNIRCL	30.000
322	HCV 2b	39	22	10	B_3501	LPPLmEARGI	12.000
323	HCV 2b	40	1	9	A_0201	MLAWGVVTV	271.948
324	HCV 2b	40	34	9	B7	MPRMVFAST	20.000
325	HCV 2b	40	13	9	B7	VAVARTTSL	12.000
326	HCV 2b	40	13	9	B8	VAVARTTSL	16.000
327	HCV 2b	40	6	10	A_0201	VVTVPpGGVAV	10.346
328	HCV 2b	40	12	10	B7	GVAVaRTTSL	20.000
329	HCV 2b	40	28	10	B7	WSRTvPMPRM	15.000
330	HCV 2b	40	28	10	B_3501	WSRTvPMPRM	30.000
331	HCV 2b	40	40	10	B_3501	ASTEWHSSQM	20.000
332	HCV 2b	40	25	10	B_3501	VSAWsRTVPM	10.000
333	HCV 2b	41	1	9	A_0201	MLGLIPWAL	272.371
334	HCV 2b	42	9	9	A24	KSIDLATPL	17.280
335	HCV 2b	42	47	9	A3	GLGDSNAPR	12.000
336	HCV 2b	42	15	9	B7	TPLAHTAAL	80.000
337	HCV 2b	42	40	9	B7	DPLRVERGL	80.000
338	HCV 2b	42	52	9	B7	NAPRLSSFL	12.000
339	HCV 2b	42	9	9	B_3501	KSIDLATPL	20.000
340	HCV 2b	42	40	9	B_3501	DPLRVERGL	20.000
341	HCV 2b	42	15	9	B_3501	TPLAHTAAL	20.000
342	HCV 2b	42	36	9	B_3501	GPPDDPLRV	12.000
343	HCV 2b	42	56	9	B_3501	LSSFLRTGM	10.000
344	HCV 2b	42	51	9	B_4403	SNAPRLSSF	12.000
345	HCV 2b	42	47	10	A_0201	GLGDSNAPRL	87.586
346	HCV 2b	42	22	10	A_0201	ALNKpTACPL	21.362
347	HCV 2b	42	63	10	A3	GMTSaFRVTR	36.000
348	HCV 2b	42	53	10	B7	APRLsSFLRT	60.000
349	HCV 2b	42	22	10	B7	ALNKpTACPL	12.000
350	HCV 2b	42	14	10	B7	ATPLaHTAAL	12.000
351	HCV 2b	43	2	9	B7	APRRPRVC.	135.000
352	HCV 2b	44				no hits	
353	HCV 2b	45	12	9	A_0201	TMTFFSIGL	58.628
354	HCV 2b	45	28	9	B8	TARSRKPWA	16.000
355	HCV 2b	45	9	10	B7	APHTmTFFSI	24.000
356	HCV 2b	45	11	10	B7	HTMTfFSIGL	12.000
357	HCV 2b	45	28	10	B8	TARSrKPWAA	16.000
358	HCV 2b	46	2	9	A_0201	VINSIWIYL	46.689
359	HCV 2b	46	9	9	A_0201	YLAPARCLT	34.279
360	HCV 2b	46	5	9	A_0201	SIWIYLAPA	13.040

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361	HCV 2b	46	7	9	A_0201	WIYLAPARC	10.055
362	HCV 2b	46	8	9	A24	IYLAPARCL	300.000
363	HCV 2b	46	11	9	B7	APARCLTRV	12.000
364	HCV 2b	46	1	10	A_0201	MVINsIWIYL	29.711
365	HCV 2b	46	9	10	A3	YLAPaRCLTR	12.000
366	HCV 2b	46	1	10	B7	MVINsIWIYL	20.000
367	HCV 2b	47				no hits	
368	HCV 2b	48				no hits	
369	HCV 2b	49	13	9	A1	LAECKMMSF	45.000
370	HCV 2b	49	17	9	A_0201	KMMSFSSAA	176.565
371	HCV 2b	49	40	9	A3	ILASASNRK	20.000
372	HCV 2b	49	9	9	A3	ALAALAECK	20.000
373	HCV 2b	49	31	10	A_0201	MMSIqRHAQI	12.809
374	HCV 2b	49	22	10	B_3501	SSAAsAWPSM	10.000
375	HCV 2b	49	14	10	B_4403	AECKmMSFSS	12.000
376	HCV 2b	50				no hits	
377	HCV 2b	51	30	9	A_0201	VLFSRKTSV	437.482
378	HCV 2b	51	9	9	A_0201	VLVNPVPFI	224.357
379	HCV 2b	51	32	9	B7	FSRKTSVSL	40.000
380	HCV 2b	51	23	9	B7	QAPRGGLVL	12.000
381	HCV 2b	51	6	9	B7	APHVLVNPV	12.000
382	HCV 2b	51	24	9	B7	APRGGLVLF	12.000
383	HCV 2b	51	24	9	B_3501	APRGGLVLF	60.000
384	HCV 2b	51	32	9	B_3501	FSRKTSVSL	15.000
385	HCV 2b	51	29	10	A_0201	LVLFSRKTSV	38.280
386	HCV 2b	51	10	10	A_0201	LVNVPFPIQV	19.657
387	HCV 2b	51	31	10	A24	LFSRKTSVSL	20.000
388	HCV 2b	51	20	10	B7	QPNQaPRGGL	180.000
389	HCV 2b	51	24	10	B7	APRGgLVLFs	12.000
390	HCV 2b	51	20	10	B_3501	QPNQaPRGGL	20.000
391	HCV 2b	52	32	9	A_0201	GQPELLNLL	20.425
392	HCV 2b	52	10	9	A24	SYSKVPHPI	70.000
393	HCV 2b	52	32	9	A24	GQPELLNLL	10.368
394	HCV 2b	52	3	9	B_4403	STLVTLVSY	18.000
395	HCV 2b	52	5	10	A_0201	LVTLVsYSKV	15.519
396	HCV 2b	52	31	10	A24	SGQPeLLNLL	10.368
397	HCV 2b	52	4	10	A3	TLVTlVSYSK	135.000
398	HCV 2b	52	30	10	B_3501	RSGQPeLLNL	15.000
399	HCV 2b	52	2	10	B_3501	SSTLVTLVSY	10.000
400	HCV 2b	53	40	9	A_0201	KLPTVRPTV	243.432
401	HCV 2b	53	6	9	A_0201	KLsLQLRAV	111.979
402	HCV 2b	53	16	9	A_0201	FMCQLPLVL	29.098
403	HCV 2b	53	22	9	A_0201	LVLINWTFc	25.565
404	HCV 2b	53	24	9	A_0201	LINWTFcWA	12.135
405	HCV 2b	53	12	9	A24	RAVRfMCQL	12.000
406	HCV 2b	53	12	9	B7	RAVRfMCQL	12.000
407	HCV 2b	53	43	9	B7	TVRPTVAPV	10.000
408	HCV 2b	53	19	10	A_0201	QLPLvLINWT	94.268
409	HCV 2b	53	23	10	A_0201	VLINWTFcWA	88.257
410	HCV 2b	53	16	10	A_0201	FMCQlPLVLI	79.718
411	HCV 2b	53	9	10	A_0201	LQLRaVRfMC	18.376
412	HCV 2b	53	8	10	A_0201	SLQLrAVRFM	12.569

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413	HCV 2b	53	15	10	A24	RFMCqLPLVL	72.000
414	HCV 2b	53	2	10	A24	KPVCKLSLQL	14.400
415	HCV 2b	53	6	10	A3	KLSLqLRAVR	12.000
416	HCV 2b	53	13	10	B7	AVRFmCQLPL	600.000
417	HCV 2b	53	32	10	B7	APSLkRPAKL	240.000
418	HCV 2b	53	2	10	B7	KPVCKLSLQL	80.000
419	HCV 2b	53	32	10	B8	APSLkRPAKL	16.000
420	HCV 2b	53	2	10	B_3501	KPVCKLSLQL	40.000
421	HCV 2b	53	32	10	B_3501	APSLkRPAKL	20.000
422	HCV 2b	53	20	10	B_3501	LPLVLINWTF	20.000
423	HCV 2b	54	4	10	A3	TLAHaPCMEK	60.000
424	HCV 2b	55	10	10	A_0201	IMSHaMRWPV	640.458
425	HCV 2b	55	1	10	B7	MVRVgDQFSI	20.000
426	HCV 2b	56	9	9	A_0201	KLWRSGDTI	148.506
427	HCV 2b	56	35	9	B_4403	AEQTVAAIT	18.000
428	HCV 2b	56	24	10	A1	ITAPhTSPTY	25.000
429	HCV 2b	56	9	10	A3	KLWRSGDTIR	60.000
430	HCV 2b	56	3	10	A3	QLHSwVKLWR	12.000
431	HCV 2b	56	35	10	B_4403	AEQTVAAITI	18.000
432	HCV 2b	56	24	10	B_4403	ITAPhTSPTY	12.000
433	HCV 2b	57	1	9	A_0201	MLLFEQSLV	437.482
434	HCV 2b	57	2	9	A_0201	LLFEQSLVA	52.529
435	HCV 2b	58	24	9	A_0201	KEQPGKFLV	27.454
436	HCV 2b	58	22	9	B_4403	IEKEQPGKF	60.000
437	HCV 2b	58	24	9	B_4403	KEQPGKFLV	12.000
438	HCV 2b	58	2	10	A_0201	FLISTEDTGT	34.279
439	HCV 2b	58	24	10	B_4403	KEQPgKFLVA	12.000
440	HCV 2b	59	83	9	A1	RSEVFLVAR	27.000
441	HCV 2b	59	87	9	A_0201	FLVARTPNL	98.267
442	HCV 2b	59	56	9	A24	GYPGFQDL	360.000
443	HCV 2b	59	11	9	A3	VMVSMTLPK	60.000
444	HCV 2b	59	12	9	B7	MVSMTLPKL	20.000
445	HCV 2b	59	42	9	B_3501	QPAQPQPSF	20.000
446	HCV 2b	59	69	9	B_3501	RSFGMGWRL	10.000
447	HCV 2b	59	84	9	B_4403	SEVFLVART	48.000
448	HCV 2b	59	11	10	A_0201	VMVSMTLPKL	60.325
449	HCV 2b	59	79	10	A_0201	RGWDrSEVFL	26.100
450	HCV 2b	59	86	10	A24	VFLVaRTPNL	30.000
451	HCV 2b	59	8	10	A24	KPHVmVSMTL	11.200
452	HCV 2b	59	51	10	A24	PYRGqGYPGF	10.000
453	HCV 2b	59	89	10	B7	VARTpNLGPL	120.000
454	HCV 2b	59	8	10	B7	KPHVmVSMTL	80.000
455	HCV 2b	59	19	10	B7	KLRDlCRGSL	60.000
456	HCV 2b	59	77	10	B7	LPRGwDRSEV	60.000
457	HCV 2b	59	35	10	B7	DPRGdRSQPA	20.000
458	HCV 2b	59	64	10	B7	LPVErRSFGM	20.000
459	HCV 2b	59	2	10	B7	YPMRsAKPHV	12.000
460	HCV 2b	59	35	10	B8	DPRGdRSQPA	32.000
461	HCV 2b	59	89	10	B8	VARTpNLGPL	16.000
462	HCV 2b	59	64	10	B_3501	LPVErRSFGM	80.000
463	HCV 2b	59	8	10	B_3501	KPHVmVSMTL	40.000
464	HCV 2b	59	77	10	B_3501	LPRGwDRSEV	18.000

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465	HCV 2b	59	6	10	B_3501	SAKPhVMVSM	18.000
466	HCV 2b	59	19	10	B_3501	KLRDlCRGSL	12.000
467	HCV 2b	59	62	10	B_4403	QDLpVERRSF	20.000
468	HCV 2b	59	66	10	B_4403	VERRsFGMGW	12.000
469	HCV 2b	60				no hits	
470	HCV 2b	61	7	9	A_0201	VLPHGPDVV	23.754
471	HCV 2b	62	15	9	A_0201	LLLLGPTWC	171.868
472	HCV 2b	62	16	9	A3	LLLLGPTWCY	40.500
473	HCV 2b	62	8	9	B7	TQRADWQLL	40.000
474	HCV 2b	62	14	10	A_0201	QLLLlGPTWC	101.099
475	HCV 2b	62	22	10	A_0201	WCYEgSCPGV	27.401
476	HCV 2b	62	6	10	A_0201	RVTQrADWQL	14.019
477	HCV 2b	62	15	10	A3	LLLLgPTWCY	27.000
478	HCV 2b	62	8	10	B7	TQRAdWQLLL	40.000
479	HCV 2b	62	6	10	B7	RVTQrADWQL	20.000
480	HCV 2b	63				no hits	
481	HCV 2b	64				no hits	
482	HCV 2b	65	13	9	B7	HPLDRPLSL	80.000
483	HCV 2b	65	11	9	B7	SVHPLDRPL	20.000
484	HCV 2b	65	13	9	B8	HPLDRPLSL	24.000
485	HCV 2b	65	13	9	B_3501	HPLDRPLSL	40.000
486	HCV 2b	65	20	10	A_0201	SLADvAAQDC	20.369
487	HCV 2b	65	3	10	B7	SPRGkGDQSV	40.000
488	HCV 2b	65	3	10	B_3501	SPRGkGDQSV	12.000
489	HCV 2b	65	27	10	B_4403	QDCCaNDSHY	15.000
490	HCV 2b	66	6	9	A_0201	LVGHGTQAV	10.346
491	HCV 2b	66	5	10	A_0201	NLVGhGTQAV	69.552
492	HCV 2b	67				no hits	
493	HCV 2b	68				no hits	
494	HCV 2b	69	9	9	A_0201	CLSPPHDDL	10.468
495	HCV 2b	69	11	9	B7	SPPHDDLlLL	80.000
496	HCV 2b	69	29	9	B7	GNRQVPQTL	40.000
497	HCV 2b	69	11	9	B_3501	SPPHDDLlLL	30.000
498	HCV 2b	69	18	10	A_0201	LLHWaEHDRl	17.795
499	HCV 2b	69	9	10	A_0201	CLSPpHDDLl	10.468
500	HCV 2b	69	28	10	A24	HGNRqVPQTL	10.080
501	HCV 2b	70				no hits	
502	HCV 2b	71	42	9	A_0201	TLNIGSIWV	382.536
503	HCV 2b	71	20	9	A_0201	WIMPQSVRV	162.769
504	HCV 2b	71	47	9	A_0201	SIWVLPKTV	79.376
505	HCV 2b	71	50	9	A_0201	VLPKTVcRA	19.425
506	HCV 2b	71	21	9	A_0201	IMPQSVRVV	16.105
507	HCV 2b	71	3	9	B7	HPYIHPHL	80.000
508	HCV 2b	71	22	9	B_3501	MPQSVRVVY	40.000
509	HCV 2b	71	3	9	B_3501	HPYIHPHL	20.000
510	HCV 2b	71	8	9	B_3501	HPHLEDGEI	12.000
511	HCV 2b	71	14	9	B_4403	GEIYGAWIM	30.000
512	HCV 2b	71	42	10	A_0201	TLNigSIWVL	151.086
513	HCV 2b	71	20	10	A_0201	WIMPqSVRVV	30.698
514	HCV 2b	71	41	10	A_0201	STLNiGSIWV	19.658
515	HCV 2b	71	49	10	A_0201	WVLPkTVcRA	17.017
516	HCV 2b	71	44	10	A3	NIGSiWVLPK	36.000

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517	HCV 2b	71	8	10	B_3501	HPHLeDGEIY	60.000
518	HCV 2b	71	11	10	B_4403	LEDGeIYGAW	18.000
519	HCV 2b	72	49	9	A_0201	KQGGHETRV	24.681
520	HCV 2b	72	68	9	A24	VYVPAAVGI	90.000
521	HCV 2b	72	8	9	A24	VFNIGDVGL	30.000
522	HCV 2b	72	29	9	B7	QPTAGRQTL	120.000
523	HCV 2b	72	3	9	B7	AVRPHVFNI	60.000
524	HCV 2b	72	1	9	B_3501	MPAVRPHVF	20.000
525	HCV 2b	72	29	9	B_3501	QPTAGRQTL	20.000
526	HCV 2b	72	61	9	B_3501	IAVEGGPVY	12.000
527	HCV 2b	72	61	10	A_0201	IAVEgGPVYV	37.032
528	HCV 2b	72	39	10	B7	AARAvEFVGI	36.000
529	HCV 2b	72	7	10	B7	HVFNIgDVGL	20.000
530	HCV 2b	72	9	10	B_4403	FNIGdVGLVF	11.250
531	HCV 2b	73	2	10	B7	AAEDnFQDQL	10.800
532	HCV 2b	74	57	9	A1	VSECTAVFY	135.000
533	HCV 2b	74	71	9	A_0201	YLYPAAQGT	109.693
534	HCV 2b	74	2	9	A_0201	TLVDgTVAl	87.586
535	HCV 2b	74	64	9	A24	FYSHIRCYL	280.000
536	HCV 2b	74	72	9	A24	LYPAAQGTI	75.000
537	HCV 2b	74	16	9	A24	AFWRYYKSL	20.000
538	HCV 2b	74	90	9	A24	KMENCVSEL	13.200
539	HCV 2b	74	82	9	A3	ILAWDTSRK	20.000
540	HCV 2b	74	14	9	A3	VVAFWRYYK	18.000
541	HCV 2b	74	9	9	A3	ALLGKVVAf	13.500
542	HCV 2b	74	75	9	B7	AAQGTIVIL	36.000
543	HCV 2b	74	103	9	B7	VVRAiISGV	10.000
544	HCV 2b	74	83	9	B_3501	LAWDTSRKM	12.000
545	HCV 2b	74	65	9	B_3501	YSHIRCYLY	10.000
546	HCV 2b	74	58	9	B_4403	SECTAVFYS	54.000
547	HCV 2b	74	96	9	B_4403	SELPgDAVV	32.000
548	HCV 2b	74	2	10	A_0201	TLVDgTVALL	201.447
549	HCV 2b	74	71	10	A_0201	YLYPaAQGTI	19.964
550	HCV 2b	74	102	10	A_0201	AVVRaIISGV	13.997
551	HCV 2b	74	94	10	A_0201	CVSELPGDAV	12.226
552	HCV 2b	74	63	10	A24	VFYShIRCYL	28.000
553	HCV 2b	74	13	10	A3	KVVAfWRYYK	81.000
554	HCV 2b	74	10	10	A3	LLGKvVAFWR	18.000
555	HCV 2b	74	15	10	B7	VAFWrYYKSL	12.000
556	HCV 2b	74	103	10	B7	VVRAiISGVV	10.000
557	HCV 2b	74	38	10	B_3501	QSRAdRSCHY	30.000
558	HCV 2b	74	98	10	B_3501	LPGDaVVRAl	16.000
559	HCV 2b	75	90	9	A_0201	RELDVLWAA	25.279
560	HCV 2b	75	18	9	B7	EPTCPTATL	120.000
561	HCV 2b	75	29	9	B7	IQRPRISWL	40.000
562	HCV 2b	75	139	9	B7	TQRYsASSL	40.000
563	HCV 2b	75	87	9	B7	AATRELDVL	36.000
564	HCV 2b	75	44	9	B7	GAPIFRDGL	18.000
565	HCV 2b	75	53	9	B7	ASPTRLGSL	12.000
566	HCV 2b	75	29	9	B8	IQRPRISWL	24.000
567	HCV 2b	75	18	9	B_3501	EPTCPTATL	20.000
568	HCV 2b	75	117	9	B_3501	RSTRPPGAL	10.000
569	HCV 2b	75	90	9	B_4403	RELDVLWAA	18.000
570	HCV 2b	75	98	10	A_0201	AVCVsFGFSL	41.197



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571	HCV 2b	75	28	10	A_0201	SIQRpRISWL	37.157
572	HCV 2b	75	90	10	A_0201	RELDvLWAAV	34.877
573	HCV 2b	75	25	10	A_0201	TLVSiQRPRI	10.433
574	HCV 2b	75	77	10	A24	RQQVnSANDL	14.400
575	HCV 2b	75	120	10	A24	RPPGaLASTL	14.400
576	HCV 2b	75	141	10	A24	RYSAsSLAGA	10.000
577	HCV 2b	75	40	10	A3	GLAGgAPIFR	36.000
578	HCV 2b	75	94	10	A3	VLWAaVCVSF	15.000
579	HCV 2b	75	52	10	B8	LASPtRLGSL	16.000
580	HCV 2b	75	115	10	B8	GARStRPPGA	16.000
581	HCV 2b	75	120	10	B_3501	RPPGaLASTL	40.000
582	HCV 2b	75	133	10	B_4403	TTRPfATQRY	13.500

Table 4i  
3a (1-3)

No.	Strain	ORF	Start	AA	HLA	Peptide sequence	Score
1	HCV 3a	1	2	9	A_0201	ALVRVSCSL	21.362
2	HCV 3a	1	2	9	B7	ALVRVSCSL	12.000
3	HCV 3a	1	1	10	B7	MALVRVSCSL	12.000
4	HCV 3a	2	32	10	A_0201	AIWVKSSIPL	24.380
5	HCV 3a	2	13	9	B7	CPRAAPVHL	800.000
6	HCV 3a	2	17	9	B7	APVHLGAQM	60.000
7	HCV 3a	2	32	10	B7	AIWVKSSIPL	12.000
8	HCV 3a	2	13	9	B8	CPRAAPVHL	16.000
9	HCV 3a	2	13	9	B_3501	CPRAAPVHL	60.000
10	HCV 3a	2	17	9	B_3501	APVHLGAQM	40.000
11	HCV 3a	2	26	9	B_3501	TPGGGPAIW	10.000
12	HCV 3a	3	8	10	A1	CTHPAAYLVF	12.500
13	HCV 3a	3	13	9	A24	AYLVFRTTI	75.000
14	HCV 3a	3	6	10	A24	SFCTHPAAYL	20.000
15	HCV 3a	3	5	10	B_3501	TSFCTHPAAY	10.000
16	HCV 3a	4	1	10	A_0201	MPPEgLLAFL	12.295
17	HCV 3a	4	13	9	B7	APNRNCSWL	240.000
18	HCV 3a	4	24	9	B7	MARGTSTAL	120.000
19	HCV 3a	4	1	10	B7	MPPEgLLAFL	80.000
20	HCV 3a	4	12	10	B7	WAPNrNCSWL	12.000
21	HCV 3a	4	24	9	B8	MARGTSTAL	16.000
22	HCV 3a	4	1	9	B_3501	MPPEGLLAF	40.000
23	HCV 3a	4	13	9	B_3501	APNRNCSWL	20.000
24	HCV 3a	4	1	10	B_3501	MPPEgLLAFL	40.000
25	HCV 3a	5	5	9	A_0201	GLLAFLVWA	883.604
26	HCV 3a	5	1	10	A_0201	MPPEgLLAFL	12.295
27	HCV 3a	5	32	9	A3	VLYTASHHR	20.000
28	HCV 3a	5	18	9	A3	HLDLVKLSR	12.000
29	HCV 3a	5	13	9	B7	TAGTTHLDL	12.000
30	HCV 3a	5	24	10	B7	LSRHqVSAVL	40.000
31	HCV 3a	5	10	10	B7	TNRtaGTTHL	40.000
32	HCV 3a	5	24	10	B_3501	LSRHqVSAVL	15.000
33	HCV 3a	6	23	9	A24	CGLPVVGGL	10.080
34	HCV 3a	6	8	9	B7	TPGVRMIPM	20.000
35	HCV 3a	6	8	9	B_3501	TPGVRMIPM	40.000
36	HCV 3a	7	22	10	A_0201	NILRpHTAGV	35.385
37	HCV 3a	7	15	9	B7	APPTaSGNI	24.000
38	HCV 3a	7	15	10	B7	APPTaSGNIL	240.000
39	HCV 3a	7	15	10	B_3501	APPTaSGNIL	20.000
40	HCV 3a	8	7	10	A3	ALDLaWWDGR	12.000
41	HCV 3a	8	43	9	A1	YVDASPPSK	20.000
42	HCV 3a	9	57	9	A_0201	YLHAGVGTV	95.662
43	HCV 3a	9	36	9	A_0201	YGGTSTPYV	11.487
44	HCV 3a	9	21	10	A_0201	SLPYhPGTSI	10.433
45	HCV 3a	9	34	10	A3	ALYGgTSTPY	30.000
46	HCV 3a	9	2	9	B7	RGRVKtALL	40.000
47	HCV 3a	9	22	9	B7	LPYhPGTSI	12.000
48	HCV 3a	9	4	10	B7	RVKtALLSAL	20.000

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49	HCV 3a	9	16	9	B_3501	WPSSASLPY	40.000
50	HCV 3a	9	28	9	B_3501	TSIGSAALY	10.000
51	HCV 3a	9	28	9	B_4403	TSIGSAALY	33.750
52	HCV 3a	10	20	9	A_0201	KLGAFLGLL	84.952
53	HCV 3a	10	13	9	A24	RSQHTPSKL	13.200
54	HCV 3a	10	17	9	B7	TPSKLGAFI	80.000
55	HCV 3a	10	17	9	B_3501	TPSKLGAFI	20.000
56	HCV 3a	10	13	9	B_3501	RSQHTPSKL	10.000
57	HCV 3a	11	13	9	B7	IPRSKCTQM	200.000
58	HCV 3a	11	10	9	B7	APNIPRSKC	13.500
59	HCV 3a	11	13	9	B8	IPRSKCTQM	80.000
60	HCV 3a	11	13	9	B_3501	IPRSKCTQM	120.000
61	HCV 3a	12	19	9	A1	VLDLSPVSK	20.000
62	HCV 3a	12	38	10	A24	RGMLqGSLGL	12.000
63	HCV 3a	12	19	9	A3	VLDLSPVSK	20.000
64	HCV 3a	12	12	9	B7	TPQRACSVL	80.000
65	HCV 3a	12	36	10	B7	ALRGmLQGSL	120.000
66	HCV 3a	12	28	10	B7	VPLEvLLCAL	80.000
67	HCV 3a	12	38	10	B7	RGMLqGSLGL	12.000
68	HCV 3a	12	12	9	B_3501	TPQRACSVL	20.000
69	HCV 3a	12	25	9	B_3501	VSKVPLEVL	15.000
70	HCV 3a	12	28	10	B_3501	VPLEvLLCAL	40.000
71	HCV 3a	12	25	10	B_3501	VSKVpLEVLL	15.000
72	HCV 3a	13	13	10	A24	RPLTwHKDIL	12.000
73	HCV 3a	13	1	9	B7	MPRPAAVKA	20.000
74	HCV 3a	13	13	10	B7	RPLTwHKDIL	80.000
75	HCV 3a	13	6	10	B7	AVKAqRSRPL	60.000
76	HCV 3a	13	6	10	B8	AVKAqRSRPL	80.000
77	HCV 3a	13	13	9	B_3501	RPLTWHKDI	16.000
78	HCV 3a	13	13	10	B_3501	RPLTwHKDIL	40.000
79	HCV 3a	14	8	9	A_0201	ALGTAPLQL	21.362
80	HCV 3a	14	8	10	A_0201	ALGTaPLQLV	159.970
81	HCV 3a	14	8	9	B7	ALGTAPLQL	12.000
82	HCV 3a	14	7	10	B7	SALGTAPLQL	12.000
83	HCV 3a	15	2	10	A1	NVMPKTLAY	25.000
84	HCV 3a	15	7	9	A_0201	TLLAYWVSA	31.249
85	HCV 3a	15	8	9	A3	LAYWVSAR	36.000
86	HCV 3a	15	3	9	A3	VMPKTLAY	12.000
87	HCV 3a	15	7	10	A3	TLLAYWVSAR	54.000
88	HCV 3a	15	4	9	B_3501	MPKTLAYW	30.000
89	HCV 3a	15	4	10	B_3501	MPKTLAYWV	12.000
90	HCV 3a	17	19	9	A1	HTDMSPPVK	50.000
91	HCV 3a	17	35	9	A_0201	RLFSVSAMT	27.572
92	HCV 3a	17	22	9	A24	MSPPVKDRL	10.080
93	HCV 3a	17	30	10	A_0201	LECLtRLFSV	30.670
94	HCV 3a	17	32	10	A_0201	CLTRLFSVSA	18.878
95	HCV 3a	17	35	10	A3	RLFSvSAMTR	40.000
96	HCV 3a	17	10	9	B7	AVRAEVDSV	30.000
97	HCV 3a	17	45	10	B7	AARGtISSPL	360.000
98	HCV 3a	17	33	10	B7	LTRLfSVSAM	10.000
99	HCV 3a	17	25	9	B8	FVKDRLECL	12.000
100	HCV 3a	17	45	10	B8	AARGtISSPL	16.000

101	HCV 3a	17	13	10	B_4403	AEVDsVHTDM	36.000
102	HCV 3a	19	4	9	A24	RPFYIGWGL	11.200
103	HCV 3a	19	6	10	A24	FYIGwGLSKM	41.250
104	HCV 3a	19	4	9	B7	RPFYIGWGL	80.000
105	HCV 3a	19	4	9	B_3501	RPFYIGWGL	40.000
106	HCV 3a	20	8	9	A24	KPPRTSSKL	13.200
107	HCV 3a	20	8	9	B7	KPPRTSSKL	80.000
108	HCV 3a	20	8	9	B_3501	KPPRTSSKL	40.000
109	HCV 3a	21	3	9	A_0201	LVSQAPWWL	131.078
110	HCV 3a	21	33	9	A_0201	YLRVLSSSV	24.315
111	HCV 3a	21	2	10	A_0201	ELVSqAPWWL	66.090
112	HCV 3a	21	3	10	A_0201	LVSQaPWLL	40.515
113	HCV 3a	21	32	9	A24	YYLRVLSSS	10.500
114	HCV 3a	21	29	9	B7	CPPYYLRVL	80.000
115	HCV 3a	21	3	9	B7	LVSQAPWWL	20.000
116	HCV 3a	21	3	10	B7	LVSQaPWLL	30.000
117	HCV 3a	21	29	9	B_3501	CPPYYLRVL	20.000
118	HCV 3a	21	25	9	B_3501	WSTCCPPYY	10.000
119	HCV 3a	21	7	9	B_3501	APWWLLRSW	10.000
120	HCV 3a	21	13	10	B_3501	RSWEeNSPPL	20.000
121	HCV 3a	21	1	9	B_4403	MELVSQAPW	24.000
122	HCV 3a	21	1	10	B_4403	MELVsQAPWW	36.000
123	HCV 3a	21	16	10	B_4403	EENSpPLRTW	18.000
124	HCV 3a	23	24	9	B7	CPTSSHGSL	80.000
125	HCV 3a	23	24	10	B7	CPTSSHGSL	80.000
126	HCV 3a	23	24	9	B_3501	CPTSSHGSL	20.000
127	HCV 3a	23	24	10	B_3501	CPTSSHGSL	20.000
128	HCV 3a	24	38	9	A_0201	TLARYGAWL	117.493
129	HCV 3a	24	78	9	A_0201	LLSSSLKWM	106.837
130	HCV 3a	24	22	9	A_0201	SMSTFPDPV	24.614
131	HCV 3a	24	45	9	A_0201	WLPTATLKC	22.853
132	HCV 3a	24	5	9	A_0201	GLQGRVHVL	20.145
133	HCV 3a	24	77	10	A_0201	RLLSsSLKWM	232.527
134	HCV 3a	24	45	10	A_0201	WLPTaTLKCA	52.561
135	HCV 3a	24	75	9	A24	KYRLSSSL	480.000
136	HCV 3a	24	41	9	A24	RYGAWLPTA	10.000
137	HCV 3a	24	67	10	A3	KMSSsVRAKY	18.000
138	HCV 3a	24	71	9	B7	SVRAKYRLL	200.000
139	HCV 3a	24	11	9	B7	HVLTCGTVL	20.000
140	HCV 3a	24	43	9	B7	GAWLPTATL	18.000
141	HCV 3a	24	71	9	B8	SVRAKYRLL	80.000
142	HCV 3a	24	68	9	B_3501	MSSSVRAKY	10.000
143	HCV 3a	24	54	9	B_4403	AEWGTSIIL	12.000
144	HCV 3a	25	72	10	A1	WTVPmCPRRY	12.500
145	HCV 3a	25	18	9	A_0201	ILQPFLSGL	317.403
146	HCV 3a	25	22	9	A_0201	FLSGLGQTT	34.279
147	HCV 3a	25	7	9	A_0201	WLQSVSRNL	19.653
148	HCV 3a	25	42	10	A_0201	IMYHqLSMDV	273.262
149	HCV 3a	25	14	10	A_0201	NLPsiLQPFL	117.493
150	HCV 3a	25	17	10	A_0201	SiLQpFLSGL	94.987
151	HCV 3a	25	22	10	A_0201	FLSGLGQTTI	47.991
152	HCV 3a	25	25	10	A_0201	GLGQtTILHC	11.426

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153	HCV 3a	25	6	10	A24	RWLQsVSRNL	16.800
154	HCV 3a	25	13	10	A24	RNLPSILQPF	12.096
155	HCV 3a	25	31	9	A3	ILHCWTAGK	60.000
156	HCV 3a	25	15	9	B7	LPSILQPF	80.000
157	HCV 3a	25	11	9	B7	VSRNLPSIL	40.000
158	HCV 3a	25	39	9	B7	KLRIMYHQL	40.000
159	HCV 3a	25	74	9	B7	VPMCPRRYV	27.000
160	HCV 3a	25	50	9	B7	DVPYHHGAL	20.000
161	HCV 3a	25	56	9	B7	GALRRSLLL	12.000
162	HCV 3a	25	10	10	B7	SVSRnLPSIL	20.000
163	HCV 3a	25	56	9	B8	GALRRSLLL	16.000
164	HCV 3a	25	15	9	B_3501	LPSILQPF	20.000
165	HCV 3a	25	11	9	B_3501	VSRNLPSIL	15.000
166	HCV 3a	25	72	10	B_4403	WTVPMcPRRY	12.000
167	HCV 3a	25	5	10	A_0201	ALTQlSLNRT	17.140
168	HCV 3a	25	20	9	A24	RYTNAATLN	10.000
169	HCV 3a	25	10	10	A3	SLNRtSGWKR	12.000
170	HCV 3a	25	2	10	B7	TPAAITQLSL	80.000
171	HCV 3a	25	2	10	B_3501	TPAAITQLSL	20.000
172	HCV 3a	26	5	10	A_0201	ALTQlSLNRT	17.140
173	HCV 3a	26	20	9	A24	RYTNAATLN	10.000
174	HCV 3a	26	10	10	A3	SLNRtSGWKR	12.000
175	HCV 3a	26	2	10	B7	TPAAITQLSL	80.000
176	HCV 3a	26	2	10	B_3501	TPAAITQLSL	20.000
177	HCV 3a	27	1	9	A_0201	MIWSWWPRV	229,4
178	HCV 3a	27	6	10	B7	WPRVtASMRM	200
179	HCV 3a	27	6	10	B_3501	WPRVtASMRM	120
180	HCV 3a	28	1	9	A_0201	MLHSPPTTL	36,32
181	HCV 3a	29	1	9	B_4403	MDHSPVRNF	15
182	HCV 3a	30	6	9	A_0201	QQLQAHHFL	44,08
183	HCV 3a	30	13	9	A_0201	FLQAGVGSL	29,38
184	HCV 3a	30	5	10	A_0201	AQQLqAHHFL	11,91
185	HCV 3a	30	12	10	A24	HFLQaGVGSL	30
186	HCV 3a	30	5	10	B7	AQQLqAHHFL	12
187	HCV 3a	31	16	10	B7	WVRApVYRRL	200
188	HCV 3a	31	18	10	B7	RAPVyRRLQL	18
189	HCV 3a	31	12	10	B7	DVRGwVRAPV	15
190	HCV 3a	31	19	9	B7	APVYRRLQL	360
191	HCV 3a	31	19	9	B8	APVYRRLQL	16
192	HCV 3a	31	24	10	A24	RLQLdQGGAL	12
193	HCV 3a	31	18	10	A24	RAPVyRRLQL	12
194	HCV 3a	31	26	10	A1	QLDQgGALRY	125
195	HCV 3a	31	26	9	A1	QLDQGGALR	10
196	HCV 3a	32	37	9	A1	LGEPCHAER	45
197	HCV 3a	32	37	10	A1	LGEPcHAERR	22,5
198	HCV 3a	32	56	10	A_0201	LVPGgLLCGV	23,8
199	HCV 3a	32	60	9	A_0201	GLLCGVVRA	42,28
200	HCV 3a	32	53	9	A24	RYRLvPGGL	560
201	HCV 3a	32	53	10	A24	RYRLvPGGLL	400
202	HCV 3a	32	68	10	B7	AGQTcPGGDL	18
203	HCV 3a	32	17	9	B7	GPTRVRCPL	120
204	HCV 3a	33				no hits	

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205	HCV 3a	34	4	9	B_3501	RPPSVGPPL	40
206	HCV 3a	35	50	9	A1	IAEFSNCHK	18
207	HCV 3a	35	44	10	A1	CSEGHRIAEF	27
208	HCV 3a	35	30	9	B7	QPRFTNALC	20
209	HCV 3a	35	45	9	B_4403	SEGHRIAEF	80
210	HCV 3a	35	19	9	B_4403	DEQAHRIRI	12
211	HCV 3a	35	51	10	B_4403	AEFSnCHKPA	12
212	HCV 3a	35	45	10	B_4403	SEGHrIAEFS	12
213	HCV 3a	36				no hits	
214	HCV 3a	37	33	10	B7	CASGkIISVL	12
215	HCV 3a	37	34	9	B7	ASGKIISVL	12
216	HCV 3a	37	16	10	B_4403	EEKNnSAGRF	60
217	HCV 3a	38	15	10	A1	GLELrLLVHR	18
218	HCV 3a	38	15	10	A3	GLELrLLVHR	18
219	HCV 3a	38	11	10	B7	TGRSgLELRL	40
220	HCV 3a	38	8	9	B7	RGRTGRSGL	60
221	HCV 3a	38	13	9	B_3501	RSGLELRLl	15

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Table 4j  
3a (4-6)

No.	Strain	ORF	Start	AA	HLA	Peptide sequence	Score
1	HCV 3a	1				no hits	
2	HCV 3a	2	1	9	A_0201	MVVEHLQSV	97.561
3	HCV 3a	2	7	9	B_3501	QSVENLPL	10.000
4	HCV 3a	3	15	9	A_0201	FLLLSTTRC	84.555
5	HCV 3a	3	8	9	A_0201	AEWADGQFL	18.962
6	HCV 3a	3	54	9	B7	QVRIARFSL	300.000
7	HCV 3a	3	28	9	B7	GPRVRHRAA	20.000
8	HCV 3a	3	34	9	B7	RAADHALLL	12.000
9	HCV 3a	3	28	9	B8	GPRVRHRAA	16.000
10	HCV 3a	3	34	9	B_3501	RAADHALLL	12.000
11	HCV 3a	3	8	10	A_0201	AEWAdGQFL	19.996
12	HCV 3a	3	53	10	A_0201	TQVRIARFSL	12.562
13	HCV 3a	3	48	10	B7	GPRVaTQVRI	80.000
14	HCV 3a	3	48	10	B_3501	GPRVaTQVRI	24.000
15	HCV 3a	3	8	10	B_4403	AEWAdGQFL	12.000
16	HCV 3a	4	32	9	A_0201	ILGRFLETL	155.527
17	HCV 3a	4	6	9	A_0201	YIIRSFPAV	83.584
18	HCV 3a	4	20	9	A3	VVWSPDRK	15.000
19	HCV 3a	4	22	9	B_3501	WSPDRKGW	15.000
20	HCV 3a	4	39	10	A_0201	TLCSHRELGV	69.552
21	HCV 3a	4	31	10	A_0201	RILGrFLETL	46.544
22	HCV 3a	4	31	10	A24	RILGrFLETL	12.000
23	HCV 3a	4	24	10	B7	SPDRKGWRIL	24.000
24	HCV 3a	5	2	9	A24	RPMRLASGL	14.400
25	HCV 3a	5	2	9	B7	RPMRLASGL	240.000
26	HCV 3a	5	2	9	B_3501	RPMRLASGL	40.000
27	HCV 3a	6	30	9	B7	QPYRESDLL	80.000
28	HCV 3a	6	30	9	B_3501	QPYRESDLL	30.000
29	HCV 3a	6	9	10	A_0201	GQHRnIWFWL	117.457
30	HCV 3a	6	23	10	B_3501	RSYRVGIQPY	20.000
31	HCV 3a	7	1	9	B_4403	MEVPHSAHF	160.000
32	HCV 3a	8	33	9	B7	QPGERWHNL	80.000
33	HCV 3a	8	15	9	B7	HAVPPPHAL	18.000
34	HCV 3a	8	33	9	B8	QPGERWHNL	24.000
35	HCV 3a	8	33	9	B_3501	QPGERWHNL	40.000
36	HCV 3a	8	30	9	B_4403	NEGQPGERW	12.000
37	HCV 3a	8	17	10	B7	VPPPhALVSL	80.000
38	HCV 3a	8	17	10	B_3501	VPPPhALVSL	20.000
39	HCV 3a	9				no hits	
40	HCV 3a	10	28	9	A_0201	LQQSKDFFL	117.457
41	HCV 3a	10	44	9	A_0201	SLLDVRGGL	42.129
42	HCV 3a	10	1	9	A_0201	MLVPEGLKL	36.316
43	HCV 3a	10	2	9	A_0201	LVPEGLKLL	29.965
44	HCV 3a	10	14	9	A24	SYGLNDSL	240.000
45	HCV 3a	10	15	9	A24	YYGLNDSL	200.000
46	HCV 3a	10	44	9	A24	SLLDVRGGL	10.080
47	HCV 3a	10	8	9	A3	KLLPVGSYY	40.500

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48	HCV 3a	10	10	9	B7	LPVGSYYGL	80.000
49	HCV 3a	10	38	9	B7	LVGYCLSL	20.000
50	HCV 3a	10	2	9	B7	LVPEGLKLL	20.000
51	HCV 3a	10	30	9	B_3501	QSKDFLEL	30.000
52	HCV 3a	10	10	9	B_3501	LPVGSYYGL	20.000
53	HCV 3a	10	27	10	A_0201	SLQQSKDFFL	681.461
54	HCV 3a	10	1	10	A_0201	MLVPeGLKLL	83.527
55	HCV 3a	10	9	10	A_0201	LLPVgSYGYL	54.474
56	HCV 3a	10	29	10	A_0201	QQSKdFFLEL	15.638
57	HCV 3a	10	15	10	A24	YYGLnDSL	200.000
58	HCV 3a	10	14	10	A24	SYYGLNDSL	200.000
59	HCV 3a	10	34	10	A24	FFLELVGYCL	50.400
60	HCV 3a	10	23	10	A3	LLGGSLLQQSK	30.000
61	HCV 3a	10	6	10	A3	GLKLlPVGSY	16.200
62	HCV 3a	10	32	10	B_4403	KDFFLELVGY	22.500
63	HCV 3a	10	15	10	A24	YYGLnDSL	200.000
64	HCV 3a	10	14	10	A24	SYYGLNDSL	200.000
65	HCV 3a	10	34	10	A24	FFLELVGYCL	50.400
66	HCV 3a	10	23	10	A3	LLGGSLLQQSK	30.000
67	HCV 3a	10	6	10	A3	GLKLlPVGSY	16.200
68	HCV 3a	10	32	10	B_4403	KDFFLELVGY	22.500
69	HCV 3a	11				no hits	
70	HCV 3a	12	27	9	A_0201	RAQGHFFDV	10.645
71	HCV 3a	12	25	9	A24	TFRAQGHFF	10.000
72	HCV 3a	12	6	9	B_3501	VPPPLEQGY	40.000
73	HCV 3a	12	15	10	A24	RYSltVEGDL	560.000
74	HCV 3a	12	1	10	B7	MAKDKVPPPL	12.000
75	HCV 3a	12	1	10	B8	MAKDKVPPPL	24.000
76	HCV 3a	12	1	10	B_3501	MAKDKVPPPL	18.000
77	HCV 3a	13	14	9	B7	GATPVREKL	18.000
78	HCV 3a	13	19	9	B_4403	REKLTVGGI	12.000
79	HCV 3a	13	9	10	A_0201	IVCPpGATPV	10.346
80	HCV 3a	14	5	10	A3	YLIALWNSRR	18.000
81	HCV 3a	15	32	9	B7	APSRDDIGI	24.000
82	HCV 3a	15	1	9	B7	MPRRAHNR	20.000
83	HCV 3a	15	32	9	B_3501	APSRDDIGI	12.000
84	HCV 3a	15	29	10	B7	VPPApSRDDI	12.000
85	HCV 3a	15	36	10	B_4403	DDIGIAGNQV	16.875
86	HCV 3a	16	16	9	B7	SPRNPPHCC	30.000
87	HCV 3a	16	3	9	B8	GARERSRTC	24.000
88	HCV 3a	16	16	10	B7	SPRNpPHCCT	30.000
89	HCV 3a	17	43	9	B_4403	CEIDCTWVM	30.000
90	HCV 3a	17	35	9	B_4403	HEHPHLEQC	12.000
91	HCV 3a	17	50	9	A_0201	VMPKPVWIV	603.952
92	HCV 3a	17	2	9	A_0201	QQWMLLA	134.619
93	HCV 3a	17	4	9	A_0201	WMLLA	128.242
94	HCV 3a	17	49	9	A_0201	WVMPKPVWI	85.454
95	HCV 3a	17	56	9	A_0201	WIVDHAAGC	12.883
96	HCV 3a	17	32	9	B7	EPTHEPHL	80.000
97	HCV 3a	17	71	9	B7	TPAVCGLRM	20.000
98	HCV 3a	17	67	9	B7	GPRTTPAVC	20.000
99	HCV 3a	17	23	9	B7	VASGGKPV	12.000



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100	HCV 3a	17	71	9	B_3501	TPAVCGLRM	40.000
101	HCV 3a	17	32	9	B_3501	EPTHEHPhL	30.000
102	HCV 3a	17	37	9	B_3501	HPHLEQCEI	12.000
103	HCV 3a	17	43	9	B_4403	CEIDCTWVM	30.000
104	HCV 3a	17	35	9	B_4403	HEHPHLEQC	12.000
105	HCV 3a	17	44	10	A1	EIDCtWVMPK	50.000
106	HCV 3a	17	49	10	A_0201	WVMPkPVWIV	732.572
107	HCV 3a	17	6	10	A_0201	LAAvTIFDI	236.595
108	HCV 3a	17	1	10	A_0201	MQQWmLLAAV	27.573
109	HCV 3a	17	41	10	A_0201	EQCEiDCTWV	11.926
110	HCV 3a	17	44	10	A3	EIDCtWVMPK	10.800
111	HCV 3a	17	9	10	B7	AVTIFDIAAL	60.000
112	HCV 3a	17	71	10	B_3501	TPAVcGLRMF	20.000
113	HCV 3a	17	40	10	B_4403	LEQCeIDCTW	12.000
114	HCV 3a	18	4	9	A_0201	KQPSYEPGV	24.681
115	HCV 3a	18	32	9	A_0201	NQLQFLLGA	16.289
116	HCV 3a	18	15	9	A_0201	LITVQGSav	16.258
117	HCV 3a	18	30	9	A_0201	GVNQLQFLL	10.841
118	HCV 3a	18	7	9	A24	SYEPGVYGL	360.000
119	HCV 3a	18	36	9	A3	FLLGAHTKK	45.000
120	HCV 3a	18	30	9	B7	GVNQLQFLL	20.000
121	HCV 3a	18	5	9	B_3501	QPSYEPGVY	60.000
122	HCV 3a	18	44	9	B_3501	KASKPSGGM	12.000
123	HCV 3a	18	36	10	A_0201	FLLGaHTKKA	84.555
124	HCV 3a	18	14	10	A_0201	GLITvQGSav	69.552
125	HCV 3a	18	28	10	A_0201	AIGVnQLQFL	37.157
126	HCV 3a	18	7	10	A24	SYEPgVYGLI	126.000
127	HCV 3a	18	25	10	B7	VPRAiGVNQL	800.000
128	HCV 3a	18	28	10	B7	AIGVnQLQFL	12.000
129	HCV 3a	18	25	10	B8	VPRAiGVNQL	16.000
130	HCV 3a	18	25	10	B_3501	VPRAiGVNQL	60.000
131	HCV 3a	19	10	9	A3	GLGHPQDVR	18.000
132	HCV 3a	19	2	10	B7	GPGYyVEQGL	80.000
133	HCV 3a	19	2	10	B_3501	GPGYyVEQGL	20.000
134	HCV 3a	20	34	9	A24	RYAAGCVQN	10.000
135	HCV 3a	20	39	9	B7	CVQNDVIGL	20.000
136	HCV 3a	20	23	9	B7	PARGYIVVL	12.000
137	HCV 3a	20	22	10	B7	GPARgYIVVL	80.000
138	HCV 3a	20	22	10	B_3501	GPARgYIVVL	20.000
139	HCV 3a	21	65	9	A_0201	LITIEGPRV	16.258
140	HCV 3a	21	83	9	A_0201	ALTRLGDRL	10.468
141	HCV 3a	21	57	9	B7	EPPCPPAAL	120.000
142	HCV 3a	21	79	9	B7	GPASALTRL	80.000
143	HCV 3a	21	83	9	B7	ALTRLGDRL	12.000
144	HCV 3a	21	57	9	B_3501	EPPCPPAAL	20.000
145	HCV 3a	21	79	9	B_3501	GPASALTRL	20.000
146	HCV 3a	21	68	9	B_4403	IEGPRVPGL	24.000
147	HCV 3a	21	14	9	B_4403	DERDVPHEV	18.000
148	HCV 3a	21	64	10	A_0201	ALITIEGPRV	69.552
149	HCV 3a	21	75	10	A_0201	GLSPgPASAL	21.362
150	HCV 3a	21	86	10	A_0201	RLGDrLSSSA	20.369
151	HCV 3a	21	43	10	A_0201	VIWApRWTGA	16.386

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152	HCV 3a	21	82	10	B7	SALTrLGDRl	12.000
153	HCV 3a	21	57	10	B7	EPPCpPAALI	12.000
154	HCV 3a	21	68	10	B_4403	IEGPrVPGLS	12.000
155	HCV 3a	22	14	9	A_0201	QGSDFWWSV	23.734
156	HCV 3a	22	5	9	B_3501	FPREDRSSS	18.000
157	HCV 3a	22	15	10	A1	GSDPwWSVAS	15.000
158	HCV 3a	22	13	10	A_0201	SQGSdFWWSV	89.910
159	HCV 3a	23	2	9	A_0201	SMTLSRTPL	15.428
160	HCV 3a	23	1	10	B7	MSMTLSRTPL	18.000
161	HCV 3a	23	8	10	B_3501	TPLPgRGAPW	10.000
162	HCV 3a	24	42	9	A_0201	QLVVHNPEL	21.362
163	HCV 3a	24	35	9	B7	VVRHIHGQL	200.000
164	HCV 3a	24	53	9	B7	GPTVEDCSL	80.000
165	HCV 3a	24	53	9	B_3501	GPTVEDCSL	30.000
166	HCV 3a	24	26	9	B_4403	EEGPAERPv	12.000
167	HCV 3a	24	23	10	A1	SSEEEGPAER	27.000
168	HCV 3a	24	34	10	B7	VVVRhIHGQL	20.000
169	HCV 3a	24	9	10	B7	TPRThWNRPA	20.000
170	HCV 3a	24	35	10	B7	VVRHIHGQLV	10.000
171	HCV 3a	24	30	10	B_4403	AERPvVVRHI	72.000
172	HCV 3a	25				no hits	
173	HCV 3a	26				no hits	
174	HCV 3a	27				no hits	
175	HCV 3a	28	3	9	A_0201	KVYWVRWCT	54.772
176	HCV 3a	29	17	9	A_0201	LLLPRKDSV	214.366
177	HCV 3a	29	19	9	B7	LPRKDSVST	20.000
178	HCV 3a	29	30	9	B7	RPPATRPCI	12.000
179	HCV 3a	29	30	9	B_3501	RPPATRPCI	16.000
180	HCV 3a	29	16	10	A_0201	RLLLpRKDSV	126.098
181	HCV 3a	29	18	10	A_0201	LLPRkDSVST	12.668
182	HCV 3a	30	5	9	A_0201	YLGPyGHDV	319.939
183	HCV 3a	30	12	9	B7	DVGCGKPHL	20.000
184	HCV 3a	31	16	9	B7	WNRsvVHQl	40.000
185	HCV 3a	31	8	9	B_3501	RPRETYRRW	120.000
186	HCV 3a	31	15	10	A24	RWNRSVWHQl	16.800
187	HCV 3a	31	8	10	B_3501	RPRETYRRWN	24.000
188	HCV 3a	31	4	10	B_3501	RSNPrPRETY	20.000
189	HCV 3a	32	41	9	B_4403	EELNCQKRM	12.000
190	HCV 3a	32	23	10	B7	RCRSgHEGIL	40.000
191	HCV 3a	32	11	10	B7	VPRKrPGPLC	30.000
192	HCV 3a	32	10	10	B7	LVPRkRPGPL	20.000
193	HCV 3a	33				no hits	
194	HCV 3a	34	19	9	B_3501	RAPHHTGCM	12.000
195	HCV 3a	34	20	9	B_3501	APHHTGCMW	10.000
196	HCV 3a	34	7	10	A_0201	GMDSrPCSGV	20.093
197	HCV 3a	35				no hits	
198	HCV 3a	36				no hits	
199	HCV 3a	37	27	9	A1	RAEPRTGLR	90.000
200	HCV 3a	37	27	10	A1	RAEPRTGLRS	45.000
201	HCV 3a	37	10	10	A1	ATLPtRSPhY	25.000
202	HCV 3a	37	25	10	B7	GTRAEPRtGL	90.000
203	HCV 3a	37	3	10	B7	GSRAgTGATL	40.000

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204	HCV 3a	37	29	10	B7	EPRTgLRSDA	30.000
205	HCV 3a	37	3	10	B_3501	GSRAGTGATL	15.000
206	HCV 3a	37	10	10	B_4403	ATLPtRSPHY	24.000
207	HCV 3a	38	8	9	A1	GLEAARHSY	45.000
208	HCV 3a	38	8	9	A3	GLEAARHSY	12.000
209	HCV 3a	38	1	9	B7	MALPGGGGL	12.000
210	HCV 3a	39				no hits	
211	HCV 3a	40	26	9	A_0201	LVLVRTAQL	11.757
212	HCV 3a	40	11	9	A_0201	QMDKSNWPA	10.764
213	HCV 3a	40	20	9	A24	RSGSVSLVL	11.200
214	HCV 3a	40	27	9	A3	VLVRTAQLK	30.000
215	HCV 3a	40	26	9	B7	LVLVRTAQL	20.000
216	HCV 3a	40	18	9	B7	PARGSGVSL	12.000
217	HCV 3a	40	10	10	A_0201	NQMDkSNWPA	57.308
218	HCV 3a	40	25	10	A_0201	SLVLVRTAQL	21.362
219	HCV 3a	40	27	10	A3	VLVRTAQLKR	12.000
220	HCV 3a	40	17	10	B7	WPARGSGVSL	80.000
221	HCV 3a	40	3	10	B7	FPPTpTVNQM	20.000
222	HCV 3a	40	3	10	B_3501	FPPTpTVNQM	40.000
223	HCV 3a	40	17	10	B_3501	WPARGSGVSL	20.000
224	HCV 3a	41	1	9	A_0201	MIAGKSSGV	16.258
225	HCV 3a	42	19	9	A_0201	MMMLPNQEL	97.045
226	HCV 3a	42	20	9	A_0201	MMLPNQELT	16.588
227	HCV 3a	42	7	9	A_0201	IITMRTQMV	16.258
228	HCV 3a	42	14	9	B7	MVGAYMML	20.000
229	HCV 3a	42	19	9	B7	MMMLPNQEL	18.000
230	HCV 3a	42	1	9	B_4403	MEKKCVIIT	12.000
231	HCV 3a	42	21	10	A_0201	MLPNqELTGV	271.948
232	HCV 3a	42	18	10	A_0201	YMMMLPNQEL	262.591
233	HCV 3a	42	13	10	A_0201	QMVGaYMMML	35.485
234	HCV 3a	42	19	10	A_0201	MMMLpNQELT	16.588
235	HCV 3a	42	6	10	A_0201	VIIITmRTQMV	16.258
236	HCV 3a	42	13	10	A3	QMVGaYMMML	12.150
237	HCV 3a	42	18	10	B7	YMMMLPNQEL	18.000
238	HCV 3a	43	13	9	A_0201	VSYPNPKGV	10.126
239	HCV 3a	43	14	9	A24	SYENPKGVF	150.000
240	HCV 3a	43	20	9	B7	GVFFfEVHIL	20.000
241	HCV 3a	43	17	9	B_3501	NPKGVFFfEV	12.000
242	HCV 3a	43	15	9	B_4403	YENPKGVFF	120.000
243	HCV 3a	43	7	9	B_4403	VESKQRVSY	120.000
244	HCV 3a	43	6	10	A1	TVESkQRVSY	90.000
245	HCV 3a	43	14	10	A24	SYENpKGVFF	150.000
246	HCV 3a	43	19	10	A24	KGVFFfEVHIL	12.000
247	HCV 3a	43	13	10	B_3501	VSYPnPKGVF	10.000
248	HCV 3a	44	16	9	A_0201	SQTERIWL	35.624
249	HCV 3a	44	35	9	A_0201	ALYPNFDRA	14.801
250	HCV 3a	44	1	9	A_0201	MMVVGIGVV	10.468
251	HCV 3a	44	29	9	B_4403	KERTSFALY	120.000
252	HCV 3a	44	1	10	A_0201	MMVVGIGVVV	35.012
253	HCV 3a	44	26	10	A_0201	LLDKeRTSFA	18.580
254	HCV 3a	44	20	10	A3	RIWLmALLDK	30.000
255	HCV 3a	44	14	10	B_3501	KSSQteRIWL	15.000

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256	HCV 3a	44	15	10	B_3501	SSQTeRIWLM	10.000
257	HCV 3a	45	7	9	A_0201	FTLDARSFT	39.723
258	HCV 3a	45	1	9	A_0201	MVSMRAFTL	18.430
259	HCV 3a	45	13	9	A24	SFTSFNTVL	20.000
260	HCV 3a	45	6	9	A24	AFTLDARSF	10.000
261	HCV 3a	45	1	9	B7	MVSMRAFTL	20.000
262	HCV 3a	45	9	9	B_4403	LDARSFTSF	15.000
263	HCV 3a	45	12	10	B_3501	RSFTsFNTVL	10.000
264	HCV 3a	46	35	9	A1	TVDQESQLK	10.000
265	HCV 3a	46	27	9	A_0201	TLCSSLSLT	17.140
266	HCV 3a	46	101	9	B7	SARNAADTL	120.000
267	HCV 3a	46	64	9	B7	SPPGEGGTL	80.000
268	HCV 3a	46	78	9	B7	CVSTPEEEL	30.000
269	HCV 3a	46	101	9	B8	SARNAADTL	16.000
270	HCV 3a	46	64	9	B_3501	SPPGEGGTL	30.000
271	HCV 3a	46	84	9	B_4403	EELFSSCGF	80.000
272	HCV 3a	46	56	9	B_4403	DEHDSESDS	12.000
273	HCV 3a	46	8	10	A_0201	ALHGvIRAPV	69.552
274	HCV 3a	46	27	10	A_0201	TLCSSLSLTV	69.552
275	HCV 3a	46	33	10	A_0201	SLTFvQESQL	21.362
276	HCV 3a	46	70	10	A_0201	GTLEvVLDCV	16.515
277	HCV 3a	46	19	10	A24	EYDIeQQ'TTL	200.000
278	HCV 3a	46	46	10	B7	SPGSpSRGGM	30.000
279	HCV 3a	46	100	10	B7	ASARnAADTL	12.000
280	HCV 3a	46	46	10	B_3501	SPGSpSRGGM	40.000
281	HCV 3a	46	83	10	B_4403	EEELfSSCGF	40.000
282	HCV 3a	47	2	10	A3	LLPIsCRHNK	20.000
283	HCV 3a	47	3	10	B7	LPIScRHnKL	80.000
284	HCV 3a	47	6	10	B8	SCRHnKLAFT	16.000
285	HCV 3a	47	3	10	B8	LPIScRHnKL	16.000
286	HCV 3a	47	3	10	B_3501	LPIScRHnKL	20.000
287	HCV 3a	48	11	9	B7	HVRGPASRM	75.000
288	HCV 3a	48	14	9	B_3501	GPASRMDFP	20.000
289	HCV 3a	48	3	10	A_0201	KVPChMLAHV	48.991
290	HCV 3a	48	14	10	B_3501	GPASrMDPFF	20.000
291	HCV 3a	49	10	9	A_0201	ILAEshDL	18.476
292	HCV 3a	49	29	9	A_0201	QMIRSQSSL	15.428
293	HCV 3a	49	32	9	A24	RSQSSLQGL	14.400
294	HCV 3a	49	11	9	A3	ILAEshDLK	30.000
295	HCV 3a	49	4	9	B7	SPGSAGIIL	80.000
296	HCV 3a	49	4	9	B_3501	SPGSAGIIL	20.000
297	HCV 3a	49	32	9	B_3501	RSQSSLQGL	10.000
298	HCV 3a	49	28	10	B7	SQMIRsQSSL	12.000
299	HCV 3a	50	123	9	A1	VTEAVNAIR	45.000
300	HCV 3a	50	104	9	A1	ATHPPSMLK	25.000
301	HCV 3a	50	47	9	A1	GSSPPMILK	15.000
302	HCV 3a	50	109	9	A_0201	SMLKNIVWL	722.126
303	HCV 3a	50	95	9	A_0201	ELWGPAKWV	238.129
304	HCV 3a	50	110	9	A_0201	MLKNIVWLv	71.386
305	HCV 3a	50	148	9	A_0201	WIPLTKFHI	38.273
306	HCV 3a	50	122	9	A_0201	LVTEAVNAI	14.634
307	HCV 3a	50	116	9	A_0201	WLVVVRGLVT	14.054

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308	HCV 3a	50	161	9	A_0201	KASSFCQLV	12.848
309	HCV 3a	50	19	9	A_0201	SMAAHITPT	12.379
310	HCV 3a	50	114	9	A_0201	IVWLVRGL	12.132
311	HCV 3a	50	74	9	A_0201	TLPRPIPPM	11.426
312	HCV 3a	50	174	9	A_0201	SMTACCWVA	11.033
313	HCV 3a	50	188	9	A_0201	RTFSLNWWA	10.531
314	HCV 3a	50	146	9	A24	RYWIPLTKF	220.000
315	HCV 3a	50	129	9	B7	AIRDATAAGL	120.000
316	HCV 3a	50	143	9	B7	RPARYWIPL	80.000
317	HCV 3a	50	62	9	B7	TPAPYPARM	20.000
318	HCV 3a	50	75	9	B7	LPRPIPPMA	20.000
319	HCV 3a	50	114	9	B7	IVWLVRGL	20.000
320	HCV 3a	50	103	9	B7	VATHPPSML	18.000
321	HCV 3a	50	27	9	B7	TTRAPGDSM	15.000
322	HCV 3a	50	67	9	B7	PARMSSKTL	12.000
323	HCV 3a	50	143	9	B_3501	RPARYWIPL	40.000
324	HCV 3a	50	62	9	B_3501	TPAPYPARM	40.000
325	HCV 3a	50	186	9	B_3501	NPRTFSLNW	30.000
326	HCV 3a	50	58	9	B_3501	KAPETPAPY	24.000
327	HCV 3a	50	94	9	B_4403	EELWGPAPW	36.000
328	HCV 3a	50	141	9	B_4403	VERPARYWI	12.000
329	HCV 3a	50	109	10	A_0201	SMLKnIVWLv	3.206.057
330	HCV 3a	50	157	10	A_0201	CLCQkASSFC	27.324
331	HCV 3a	50	121	10	A_0201	GLVTeAVNAI	23.995
332	HCV 3a	50	114	10	A_0201	IVWLvVRGLV	11.163
333	HCV 3a	50	87	10	A24	KPLTtNAEEL	13.200
334	HCV 3a	50	45	10	B7	AVGSsPPMIL	90.000
335	HCV 3a	50	66	10	B7	YPARmSSKTL	80.000
336	HCV 3a	50	87	10	B7	KPLTtNAEEL	80.000
337	HCV 3a	50	149	10	B7	IPLTkFHICL	80.000
338	HCV 3a	50	80	10	B7	PPMAaPAKPL	36.000
339	HCV 3a	50	75	10	B7	LPRPiPPMAA	30.000
340	HCV 3a	50	102	10	B7	WVAThPPSML	30.000
341	HCV 3a	50	11	10	B7	SPGPtCRRSM	30.000
342	HCV 3a	50	128	10	B7	NAIRdATAGL	12.000
343	HCV 3a	50	118	10	B7	VVRGLVTEAV	10.000
344	HCV 3a	50	11	10	B_3501	SPGPtCRRSM	40.000
345	HCV 3a	50	87	10	B_3501	KPLTtNAEEL	40.000
346	HCV 3a	50	186	10	B_3501	NPRTfSLNWW	30.000
347	HCV 3a	50	149	10	B_3501	IPLTkFHICL	20.000
348	HCV 3a	50	66	10	B_3501	YPARmSSKTL	20.000
349	HCV 3a	50	163	10	B_3501	SSFCqLVATM	10.000
350	HCV 3a	50	33	10	B_3501	DSMAgNRLTM	10.000
351	HCV 3a	50	43	10	B_3501	SSAVgSSPPM	10.000
352	HCV 3a	50	93	10	B_4403	AEELWGPAPW	36.000
353	HCV 3a	50	94	10	B_4403	EELWgPAKWV	18.000
354	HCV 3a	50	124	10	B_4403	TEAVnAIRDA	12.000
355	HCV 3a	51	6	9	B_4403	CEHSSISSY	120.000
356	HCV 3a	51	5	10	A1	ACEHsSISSY	45.000
357	HCV 3a	52	3	9	A_0201	AMTYFVMGC	31.359
358	HCV 3a	52	7	9	A_0201	FVMGCDKQI	15.537
359	HCV 3a	52	23	9	A24	RYKRGVGPC	10.000

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360	HCV 3a	52	27	9	B7	GVGPCSVGL	20.000
361	HCV 3a	52	35	9	B8	LSRTRHFHV	12.000
362	HCV 3a	52	34	10	A_0201	GLSRtRHFHV	403.402
363	HCV 3a	52	23	10	A24	RYKRgVGPCS	14.000
364	HCV 3a	52	26	10	A24	RGVGpCSVGL	12.000
365	HCV 3a	52	15	10	B_3501	ISFWtGPNRY	10.000
366	HCV 3a	53	21	9	A1	MTESKSPVY	225.000
367	HCV 3a	53	20	9	A_0201	SMTESKSPV	205.951
368	HCV 3a	53	46	9	A_0201	GMTDTSRPL	12.651
369	HCV 3a	53	17	9	A3	TLQSMTESK	20.000
370	HCV 3a	53	13	9	B_3501	CSTATLQSM	10.000
371	HCV 3a	53	45	10	B7	VGMTdTSRPL	12.000
372	HCV 3a	53	23	10	B_3501	ESKSpVYPVM	30.000
373	HCV 3a	53	9	10	B_3501	KSTYcSTATL	10.000
374	HCV 3a	53	22	10	B_4403	TESKsPVYPV	12.000
375	HCV 3a	54	7	9	A_0201	VMLPGGVRV	315.959
376	HCV 3a	54	6	10	A_0201	TVMLpGGVRV	22.517
377	HCV 3a	54	8	10	A3	MLPGgVRVAK	45.000
378	HCV 3a	54	12	10	B7	GVRVaKTVSL	200.000
379	HCV 3a	54	12	10	B8	GVRVaKTVSL	80.000
380	HCV 3a	55	12	9	B_4403	DGFSTRTVY	13.500
381	HCV 3a	55	5	10	B_3501	KPSVaATDGF	40.000
382	HCV 3a	55	11	10	B_4403	TDGFsTRTVY	22.500
383	HCV 3a	55	2	10	B_4403	KEPKpSVAAT	12.000
384	HCV 3a	56	40	9	A_0201	GLGLSKLAV	69.552
385	HCV 3a	56	65	9	A24	KYKSAEPQA	10.000
386	HCV 3a	56	45	9	A3	KLAVESPLR	12.000
387	HCV 3a	56	33	9	B7	EPLRQARGL	80.000
388	HCV 3a	56	8	9	B7	TPLVHTAAL	80.000
389	HCV 3a	56	2	9	B7	NCRAFATPL	40.000
390	HCV 3a	56	2	9	B8	NCRAFATPL	16.000
391	HCV 3a	56	8	9	B_3501	TPLVHTAAL	20.000
392	HCV 3a	56	33	9	B_3501	EPLRQARGL	20.000
393	HCV 3a	56	58	9	B_3501	TSASRVTKY	10.000
394	HCV 3a	56	49	9	B_3501	ESPLRRAGM	10.000
395	HCV 3a	56	58	9	B_4403	TSASRVTKY	40.500
396	HCV 3a	56	68	10	A1	SAEPqAHGSR	90.000
397	HCV 3a	56	56	10	A3	GMTSaSRVTK	60.000
398	HCV 3a	56	45	10	A3	KLAVeSPLRR	24.000
399	HCV 3a	56	37	10	B7	QARGlGLSKL	120.000
400	HCV 3a	56	70	10	B7	EPQAhGSRDL	80.000
401	HCV 3a	56	7	10	B7	ATPLvHTAAL	12.000
402	HCV 3a	56	18	10	B7	IPATcPEGHI	12.000
403	HCV 3a	56	37	10	B8	QARGlGLSKL	16.000
404	HCV 3a	56	34	10	B8	PLRQaRGLGL	16.000
405	HCV 3a	56	70	10	B_3501	EPQAhGSRDL	20.000
406	HCV 3a	56	43	10	B_3501	LSKLAVeSPL	15.000
407	HCV 3a	56	57	10	B_4403	MTSAsRVTKY	20.250
408	HCV 3a	57	2	9	A_0201	TLISMGLNI	10.433
409	HCV 3a	57	21	9	B_3501	RPAAAQCCI	16.000
410	HCV 3a	57	27	9	B_4403	CCIGARWSY	33.750
411	HCV 3a	57	16	10	B8	TARSLRPAAA	16.000

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412	HCV 3a	58	13	9	A1	ITERTSMQR	11.250
413	HCV 3a	58	5	9	A_0201	IIWKYFPPI	38.458
414	HCV 3a	58	1	9	A3	MLSMIIWKY	27.000
415	HCV 3a	58	5	10	A_0201	IIWKYFPPI	22.525
416	HCV 3a	58	8	10	A24	KYFPpITERT	16.800
417	HCV 3a	58	10	10	B7	FPPItERTSM	30.000
418	HCV 3a	58	10	10	B_3501	FPPItERTSM	60.000
419	HCV 3a	59	52	9	A24	KTPAPRVAL	12.000
420	HCV 3a	59	38	9	A3	CLYQGDVKV	50.000
421	HCV 3a	59	31	9	B7	HIRRPIQCL	60.000
422	HCV 3a	59	6	9	B7	LPRASKGGT	20.000
423	HCV 3a	59	47	9	B_3501	KPKRAKTPA	12.000
424	HCV 3a	59	19	9	B_4403	ADSHLHMVY	30.000
425	HCV 3a	59	18	10	A1	RADShLHMVY	125.000
426	HCV 3a	59	59	10	A_0201	ALSSpDHAYA	27.324
427	HCV 3a	59	38	10	A3	CLYQGDVKVK	100.000
428	HCV 3a	59	24	10	A3	HMVYwFHHIR	18.000
429	HCV 3a	59	77	10	B7	KARGqRPVRL	120.000
430	HCV 3a	59	77	10	B8	KARGqRPVRL	160.000
431	HCV 3a	59	77	10	B_3501	KARGqRPVRL	18.000
432	HCV 3a	60	2	9	A_0201	RMTNSHFSA	20.810
433	HCV 3a	60	5	10	B_3501	NSHFSaHPTM	10.000
434	HCV 3a	61	68	9	A_0201	TLNNVKLTV	69.552
435	HCV 3a	61	66	9	A_0201	ILTLNNVKL	36.316
436	HCV 3a	61	51	9	A_0201	QLQAAVNRC	11.426
437	HCV 3a	61	61	9	B7	NPPTNILT	80.000
438	HCV 3a	61	44	9	B7	SQRSPLVQL	60.000
439	HCV 3a	61	61	9	B_3501	NPPTNILT	20.000
440	HCV 3a	61	66	10	A_0201	ILTLnNVKLT	29.137
441	HCV 3a	61	65	10	A_0201	NILTlNNVKL	10.868
442	HCV 3a	61	6	10	B7	CIRPvDSAGM	10.000
443	HCV 3a	61	8	10	B_3501	RPVDsAGMGV	16.000
444	HCV 3a	61	40	10	B_3501	RSSIsQRSP	10.000
445	HCV 3a	62	14	9	A24	LYVASGCFL	300.000
446	HCV 3a	62	21	9	A3	FLKQSVGQK	18.000
447	HCV 3a	62	13	10	A_0201	RLYVaSGCFL	375.978
448	HCV 3a	63	9	9	A_0201	VLTNPVEFI	109.935
449	HCV 3a	63	6	9	B7	APHVLTNPV	12.000
450	HCV 3a	63	32	9	B_3501	SSRNTSVSF	15.000
451	HCV 3a	63	4	9	B_4403	GEAPHVLTN	14.400
452	HCV 3a	64	15	9	A_0201	VMGLQLLSL	60.325
453	HCV 3a	64	4	9	B7	SVKGPHPC	30.000
454	HCV 3a	64	14	10	A_0201	KVMGLQLLSL	55.674
455	HCV 3a	64	14	10	A24	KVMGLQLLSL	12.000
456	HCV 3a	64	9	10	B7	HPCLkKVMGL	80.000
457	HCV 3a	64	14	10	B7	KVMGLQLLSL	60.000
458	HCV 3a	64	7	10	B7	GPHPClKKVM	20.000
459	HCV 3a	64	3	10	B7	ASVKgPHPC	18.000
460	HCV 3a	64	9	10	B8	HPCLkKVMGL	16.000
461	HCV 3a	64	7	10	B_3501	GPHPClKKVM	40.000
462	HCV 3a	64	9	10	B_3501	HPCLkKVMGL	20.000
463	HCV 3a	65	15	9	A_0201	LLMCHEPLV	437.482

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464	HCV 3a	65	14	9	A_0201	VLLMCHEPL	65.841
465	HCV 3a	65	5	9	A_0201	FMDSLQFRA	38.291
466	HCV 3a	65	8	9	A_0201	SLQFRAVLL	21.362
467	HCV 3a	65	22	9	A_0201	LVLTSFC	15.038
468	HCV 3a	65	16	9	A_0201	LMCHEPLVL	10.754
469	HCV 3a	65	19	9	B_4403	HEPLVLTSC	13.500
470	HCV 3a	65	14	10	A_0201	VLLMCHEPLV	437.482
471	HCV 3a	65	23	10	A_0201	VLTScSFCWA	88.257
472	HCV 3a	65	15	10	A_0201	LLMCHEPLVL	55.091
473	HCV 3a	65	5	10	A_0201	FMDSLQFRAV	35.122
474	HCV 3a	65	16	10	A_0201	LMCHEPLVLT	21.044
475	HCV 3a	65	29	10	A_0201	FCWApTLKRL	12.246
476	HCV 3a	65	8	10	A_0201	SLQFRAVLLM	11.426
477	HCV 3a	65	13	10	B7	AVLLmCHEPL	60.000
478	HCV 3a	65	15	10	B7	LLMCHEPLVL	12.000
479	HCV 3a	65	2	10	B_3501	NPVFMDSLQF	30.000
480	HCV 3a	65	20	10	B_3501	EPLVLTSCSF	20.000
481	HCV 3a	66	1	9	A_0201	MMIATLAQL	60.325
482	HCV 3a	67	8	9	A_0201	IMSNKVWGT	157.827
483	HCV 3a	67	48	9	A_0201	SEQLQVWTV	23.329
484	HCV 3a	67	30	9	A24	QFIIISQAI	12.600
485	HCV 3a	67	43	9	A24	RWPGYSEQL	12.000
486	HCV 3a	67	24	9	B7	IPRAGNQFI	80.000
487	HCV 3a	67	1	9	B7	MPQWAPAIM	20.000
488	HCV 3a	67	5	9	B7	APAIMSNKV	12.000
489	HCV 3a	67	1	9	B_3501	MPQWAPAIM	40.000
490	HCV 3a	67	24	9	B_3501	IPRAGNQFI	24.000
491	HCV 3a	67	48	9	B_4403	SEQLQVWTV	24.000
492	HCV 3a	67	7	10	A_0201	AIMSnKVWGT	65.398
493	HCV 3a	67	55	10	A_0201	TVVWrrGLNV	50.512
494	HCV 3a	67	12	10	A_0201	KVWGtRRTCA	12.628
495	HCV 3a	67	50	10	A3	QLQVwTVVWR	36.000
496	HCV 3a	67	61	10	A3	GLNVkACPTR	12.000
497	HCV 3a	67	24	10	B7	IPRAGNQFII	80.000
498	HCV 3a	67	24	10	B_3501	IPRAGNQFII	24.000
499	HCV 3a	67	5	10	B_3501	APAIMSNKVV	10.000
500	HCV 3a	67	48	10	B_4403	SEQLqVWTVW	54.000
501	HCV 3a	67	22	10	B_4403	TAIPrAGNQF	15.000
502	HCV 3a	68	9	9	A_0201	ILLLEQSLV	437.482
503	HCV 3a	68	8	9	A_0201	TILLLEQSL	10.868
504	HCV 3a	68	10	9	A3	LLLEQSLVR	18.000
505	HCV 3a	68	4	9	B7	SASYTILLL	12.000
506	HCV 3a	68	10	10	A_0201	LLLEqSLVRT	442.013
507	HCV 3a	68	8	10	A_0201	TILLLEQSLV	35.385
508	HCV 3a	68	9	10	A3	ILLLeQSLVR	12.000
509	HCV 3a	69	42	9	B7	HPAHPQPSL	120.000
510	HCV 3a	69	12	9	B7	RVSMTLPKL	20.000
511	HCV 3a	69	42	9	B_3501	HPAHPQPSL	20.000
512	HCV 3a	69	8	10	B7	NPHVrVSMTL	80.000
513	HCV 3a	69	35	10	B7	EPRGdRSHPA	20.000
514	HCV 3a	69	2	10	B7	YPMRsANPHV	12.000
515	HCV 3a	69	35	10	B8	EPRGdRSHPA	32.000



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516	HCV 3a	69	8	10	B_3501	NPHVrVSMTL	20.000
517	HCV 3a	69	19	10	B_3501	KLRDLRRGSF	12.000
518	HCV 3a	70	3	9	A_0201	FLLVFLCGL	3.177.760
519	HCV 3a	70	15	9	A_0201	LMLHGLRDL	44.641
520	HCV 3a	70	7	9	A_0201	FLCGLGSVL	40.289
521	HCV 3a	70	1	9	A_0201	MVFLLVFLC	36.475
522	HCV 3a	70	30	9	A24	PYQAVPQGL	50.400
523	HCV 3a	70	37	9	A3	GLSRPNTTR	18.000
524	HCV 3a	70	38	9	B7	LSRPNTTRL	40.000
525	HCV 3a	70	40	9	B7	RPNTTRLVI	12.000
526	HCV 3a	70	23	9	B_3501	LPGHSQAPY	40.000
527	HCV 3a	70	40	9	B_3501	RPNTTRLVI	16.000
528	HCV 3a	70	38	9	B_3501	LSRPNTTRL	15.000
529	HCV 3a	70	14	10	A_0201	VLMLhGLRDL	61.810
530	HCV 3a	70	7	10	A_0201	FLCGLGSVLM	22.853
531	HCV 3a	70	37	10	A_0201	GLSRpNTTRL	21.362
532	HCV 3a	70	5	10	A_0201	LVFLcGLGSV	11.446
533	HCV 3a	70	6	10	A24	VFLCgLGSVL	36.000
534	HCV 3a	70	2	10	A24	VFLLvFLCGL	30.000
535	HCV 3a	70	29	10	B7	APYQaVPQGL	240.000
536	HCV 3a	70	14	10	B7	VLMLhGLRDL	12.000
537	HCV 3a	70	29	10	B_3501	APYQaVPQGL	20.000

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Table 4k  
3b (1-3)

No.	Strain	ORF	Start	AA	HLA	Peptide sequence	Score
1	HCV 3b	1	2	9	A_0201	ALVRVSCSL	21,36
2	HCV 3b	1	1	10	B7	MALVRVSCSL	12
3	HCV 3b	1	2	9	B7	ALVRVSCSL	12
4	HCV 3b	2	79	9	A1	GVDPATWVR	50
5	HCV 3b	2	79	10	A1	GVDPaTWVRS	10
6	HCV 3b	2	24	10	A1	LADGvSLPPR	10
7	HCV 3b	2	75	9	A_0201	KMTPGVDPa	14,15
8	HCV 3b	2	75	10	A_0201	KMTPgVDPAT	18,84
9	HCV 3b	2	68	10	A_0201	VLAPaGAKMT	12,67
10	HCV 3b	2	40	9	B7	GPGPSPGTL	80
11	HCV 3b	2	10	9	B7	WVCAKQVRL	20
12	HCV 3b	2	15	10	B7	QVRLpSDHNL	200
13	HCV 3b	2	40	9	B_3501	GPGPSPGTL	20
14	HCV 3b	2	77	9	B_3501	TPGVDPATW	15
15	HCV 3b	3	2	10	A_0201	RLAYiCLPTT	17,14
16	HCV 3b	3	8	10	B7	LPTTaPTGAL	120
17	HCV 3b	3	8	10	B_3501	LPTTaPTGAL	20
18	HCV 3b	4				no hits	
19	HCV 3b	5				no hits	
20	HCV 3b	6				no hits	
21	HCV 3b	7	8	10	A_0201	ALHPhrWWWA	348,38
22	HCV 3b	7	17	10	B7	APLILKACQL	240
23	HCV 3b	7	10	10	B7	HPHRwWAPL	80
24	HCV 3b	7	10	10	B_3501	HPHRwWAPL	20
25	HCV 3b	7	17	10	B_3501	APLILKACQL	20
26	HCV 3b	8	5	10	B7	LPAAGPGPGL	120
27	HCV 3b	8	11	9	B_3501	GPGLRQGVW	10
28	HCV 3b	9	12	9	A1	RGESAVILK	22,5
29	HCV 3b	9	17	9	A_0201	VILKIVTAV	138,35
30	HCV 3b	9	16	10	A_0201	AVILKIVTAV	14
31	HCV 3b	9	10	10	B7	TGRGESAVIL	40
32	HCV 3b	10	50	9	A_0201	CLFEVVGTV	315,48
33	HCV 3b	10	45	10	A_0201	YGSPPCLF	27,86
34	HCV 3b	10	44	9	A24	KYGSPPCLF	200
35	HCV 3b	10	16	10	A24	PYHHGISTGL	28
36	HCV 3b	10	27	10	A3	VLSGGTSMPY	12
37	HCV 3b	10	26	9	B7	AVLSGGTSM	15
38	HCV 3b	10	28	9	B_3501	LSGGTSMPY	10
39	HCV 3b	10	8	10	B_3501	CSCSgSGLPY	10
40	HCV 3b	10	37	9	B_4403	AGVRPPCKY	18
41	HCV 3b	11	86	9	A_0201	KLGDYLELL	345,48
42	HCV 3b	11	26	9	A_0201	SLVLWRLRL	21,36
43	HCV 3b	11	55	10	A_0201	RGWAASCCWV	20,73
44	HCV 3b	11	79	9	A24	RSQHTPSKL	13,2
45	HCV 3b	11	19	9	A24	RWPRSPSSL	12
46	HCV 3b	11	89	9	A24	DYLELLSPA	10,8
47	HCV 3b	11	10	10	A3	GLPRVSKDWR	12
48	HCV 3b	11	83	9	B7	TPSKLGDYL	80

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49	HCV 3b	11	20	9	B7	WPRSPSSLV	60
50	HCV 3b	11	58	9	B7	AASCCWVRL	36
51	HCV 3b	11	20	10	B7	WPRSPSSLVL	800
52	HCV 3b	11	23	10	B7	SPSSLVLWRL	80
53	HCV 3b	11	57	10	B7	WAASCCWVRL	12
54	HCV 3b	11	20	10	B8	WPRSPSSLVL	16
55	HCV 3b	11	83	9	B_3501	TPSKLGDYL	20
56	HCV 3b	11	20	9	B_3501	WPRSPSSLV	12
57	HCV 3b	11	79	9	B_3501	RSQHTPSKL	10
58	HCV 3b	11	20	10	B_3501	WPRSPSSLVL	60
59	HCV 3b	11	11	10	B_3501	LPRVSKDWRW	30
60	HCV 3b	11	23	10	B_3501	SPSSLVLWRL	20
61	HCV 3b	11	44	10	B_4403	AETSCAGCPF	120
62	HCV 3b	12	2	9	A_0201	VLGRGLLLV	271,95
63	HCV 3b	12	1	9	A_0201	MVLGRGLLL	11,76
64	HCV 3b	12	1	10	A_0201	MVLGRGLLLV	88,04
65	HCV 3b	12	2	10	A_0201	VLGRGLLLVT	11,95
66	HCV 3b	12	13	9	B7	GPRFKCTPM	200
67	HCV 3b	12	1	9	B7	MVLGRGLLL	20
68	HCV 3b	12	13	9	B8	GPRFKCTPM	80
69	HCV 3b	12	13	9	B_3501	GPRFKCTPM	120
70	HCV 3b	12	13	10	B_3501	GPRFKCTPMW	30
71	HCV 3b	13				no hits	
72	HCV 3b	14	22	10	B7	TPHTaSSSPM	20
73	HCV 3b	14	26	10	B7	ASSSpMGVVL	12
74	HCV 3b	14	22	10	B_3501	TPHTaSSSPM	40
75	HCV 3b	15				no hits	
76	HCV 3b	16				no hits	
77	HCV 3b	17	5	9	B7	VPGMTYNLL	80
78	HCV 3b	17	4	9	B7	VVPGMTYNL	20
79	HCV 3b	17	4	10	B7	VVPGMTYNLL	20
80	HCV 3b	17	3	10	B7	QVVPGMTYNL	20
81	HCV 3b	17	5	9	B_3501	VPGMTYNLL	20
82	HCV 3b	18				no hits	
83	HCV 3b	19				no hits	
84	HCV 3b	20	11	9	A_0201	LLTSSKHRL	36,32
85	HCV 3b	20	10	10	A_0201	LLLTSSKHRL	134,37
86	HCV 3b	20	3	9	A24	RWKNVPSSL	11,2
87	HCV 3b	20	1	10	B7	MMRWKNVPSL	40
88	HCV 3b	20	31	10	B8	CCKGRANKKL	16
89	HCV 3b	21				no hits	
90	HCV 3b	22				no hits	
91	HCV 3b	23	26	9	A_0201	CQAYPFHSV	13,4
92	HCV 3b	23	9	10	A24	SYLVtLRPGF	180
93	HCV 3b	23	37	9	B7	GTREYGEQM	10
94	HCV 3b	23	19	10	B7	RPRScPRCQA	45
95	HCV 3b	23	23	9	B_3501	CPRCQAYPF	60
96	HCV 3b	23	21	9	B_3501	RSCPRCQAY	20
97	HCV 3b	23	37	9	B_3501	GTREYGEQM	12
98	HCV 3b	23	2	9	B_3501	TSGTGSVSY	10
99	HCV 3b	24	6	9	A_0201	SMNTPLGRV	15,02
100	HCV 3b	24	2	10	B7	APSPSMNTPL	240

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101	HCV 3b	24	17	10	B7	SPRTITRVPC	30
102	HCV 3b	24	2	10	B_3501	APSPSMNTPL	20
103	HCV 3b	25	9	10	A_0201	ILITWWGPRT	12, 67
104	HCV 3b	25	1	10	B7	MSRCVGVGIL	40
105	HCV 3b	25	1	10	B_3501	MSRCVGVGIL	15
106	HCV 3b	26				no hits	
107	HCV 3b	27	1	9	A_0201	MQMGPSFHA	18, 38
108	HCV 3b	28	1	10	B7	MGRMcPRHSL	90
109	HCV 3b	29	1	9	A_0201	MLTLGPPSV	118, 24
110	HCV 3b	29	18	9	B7	AVLCHTPGL	60
111	HCV 3b	29	12	9	B7	KSRFAVL	40
112	HCV 3b	29	17	10	B7	FAVLCHTPGL	12
113	HCV 3b	29	10	9	B8	TPKSRFAV	16
114	HCV 3b	29	12	9	B_3501	KSRFAVL	30
115	HCV 3b	29	10	10	B_3501	TPKSRFAV	12
116	HCV 3b	30				no hits	
117	HCV 3b	31				no hits	
118	HCV 3b	32	50	10	A_0201	ALAASCLPAL	49, 13
119	HCV 3b	32	48	9	B7	AAALAASCL	36
120	HCV 3b	32	11	9	B7	NVVTLNQRL	20
121	HCV 3b	32	51	9	B7	LAASCLPAL	12
122	HCV 3b	32	43	9	B7	NAVIAAAL	12
123	HCV 3b	32	16	10	B7	NQRLGRQSAL	40
124	HCV 3b	32	47	10	B7	AAAALAASCL	36
125	HCV 3b	32	50	10	B7	ALAASCLPAL	12
126	HCV 3b	32	16	10	B8	NQRLGRQSAL	24
127	HCV 3b	33				no hits	
128	HCV 3b	34	8	9	B7	TTRSMGPNL	40
129	HCV 3b	34	3	10	B_3501	GSFLGTTRSM	10
130	HCV 3b	35	4	9	B7	APPRFSPQL	240
131	HCV 3b	35	3	10	B7	LAPPRFSPQL	12
132	HCV 3b	35	4	9	B_3501	APPRFSPQL	20
133	HCV 3b	36	32	9	A1	RVDPKSCEY	250
134	HCV 3b	36	40	9	A_0201	YVGGPANAV	28
135	HCV 3b	36	60	10	A24	RVPCGTSVHL	12
136	HCV 3b	36	61	9	B7	VPCGTSVHL	80
137	HCV 3b	36	6	10	B7	RNRQQQHTVL	40
138	HCV 3b	36	40	10	B7	YVGGPANAVL	20
139	HCV 3b	36	60	10	B7	RVPCGTSVHL	20
140	HCV 3b	36	61	9	B_3501	VPCGTSVHL	20
141	HCV 3b	37	2	10	A1	CVDEqYRVCK	20
142	HCV 3b	37	12	10	A_0201	DLWGsPLQHL	30, 59
143	HCV 3b	37	9	10	B8	VCKDLWGSPL	24
144	HCV 3b	37	4	10	B_4403	DEQYrVCKDL	27
145	HCV 3b	38				no hits	
146	HCV 3b	39	108	9	A1	SADNLWFDR	25
147	HCV 3b	39	2	9	A_0201	LIITYAPPV	52, 03
148	HCV 3b	39	151	9	A_0201	RVLYLITMV	51, 79
149	HCV 3b	39	111	9	A_0201	NLWFDPRVA	16, 91
150	HCV 3b	39	1	10	A_0201	MLIYtYAPPV	118, 24
151	HCV 3b	39	124	9	A24	RPPAPSACL	12
152	HCV 3b	39	80	10	A24	RPQRsGTTGL	12

153	HCV 3b	39	90	9	A3	RLVPGCILR	18
154	HCV 3b	39	35	9	A3	GLGSQVGVR	10,8
155	HCV 3b	39	90	10	A3	RLVPgCILRR	27
156	HCV 3b	39	35	10	A3	GLGSqVGVR	18
157	HCV 3b	39	147	9	B7	APAPRVLYL	240
158	HCV 3b	39	124	9	B7	RPPAPSACL	120
159	HCV 3b	39	149	9	B7	APRVLYLIT	60
160	HCV 3b	39	39	9	B7	QVGVRPRL	30
161	HCV 3b	39	92	9	B7	VPGCILRRM	20
162	HCV 3b	39	149	10	B7	APRVLYLITM	600
163	HCV 3b	39	80	10	B7	RPQRsGTTGL	80
164	HCV 3b	39	88	10	B7	GLRLvPGCIL	60
165	HCV 3b	39	51	10	B7	GGRTTrVCGPL	40
166	HCV 3b	39	147	10	B7	APAPrVLYLI	24
167	HCV 3b	39	146	10	B7	GAPAPRVLYL	12
168	HCV 3b	39	147	9	B8	APAPRVLYL	16
169	HCV 3b	39	19	9	B8	EHRGRAIPL	16
170	HCV 3b	39	146	10	B8	GAPAPRVLYL	16
171	HCV 3b	39	58	9	B_3501	GPLDDVTDF	60
172	HCV 3b	39	92	9	B_3501	VPGCILRRM	40
173	HCV 3b	39	124	9	B_3501	RPPAPSACL	40
174	HCV 3b	39	147	9	B_3501	APAPRVLYL	20
175	HCV 3b	39	83	9	B_3501	RSGTTGLRL	10
176	HCV 3b	39	149	10	B_3501	APRVLYLITM	120
177	HCV 3b	39	80	10	B_3501	RPQRsGTTGL	40
178	HCV 3b	39	105	10	B_3501	EARSaDNLWF	13,5
179	HCV 3b	39	78	9	B_4403	AERPQRSGT	16
180	HCV 3b	39	104	9	B_4403	GEARSADNL	12
181	HCV 3b	39	23	9	B_4403	RAIPLWCWF	10
182	HCV 3b	39	104	10	B_4403	GEARSADNLW	36
183	HCV 3b	39	78	10	B_4403	AERPqRSGTT	16
184	HCV 3b	39	145	10	B_4403	RGAPaPRVLY	12
185	HCV 3b	40				no hits	
186	HCV 3b	41	2	9	B7	APTVPDLST	36
187	HCV 3b	41	11	9	B_3501	RPANSGTIW	20
188	HCV 3b	42	3	10	B_3501	RARRYLHTGY	36
189	HCV 3b	43	4	10	A1	TPEAdSARPY	11,25
190	HCV 3b	43	4	10	B_3501	TPEAdSARPY	12
191	HCV 3b	43	5	9	B_4403	PEADSARPY	36
192	HCV 3b	44	17	9	B7	AIQqQSPRL	12
193	HCV 3b	44	16	10	B7	SAIQqQSPRL	12
194	HCV 3b	44	5	10	B_3501	CSLHrASTGY	10
195	HCV 3b	44	5	10	B_4403	CSLHrASTGY	13,5
196	HCV 3b	45	2	9	B_4403	AESGGVLAT	36
197	HCV 3b	45	7	9	A_0201	VLATAHVEL	36,32
198	HCV 3b	45	35	9	A24	GFPYGLHRL	30
199	HCV 3b	45	31	10	B7	QPCRgFPYGL	80
200	HCV 3b	45	6	10	B7	GVLaTAHVEL	20
201	HCV 3b	45	47	10	B7	PPHNqPDYVL	12
202	HCV 3b	45	46	9	B_3501	QPPHNQPDY	40
203	HCV 3b	45	31	10	B_3501	QPCRgFPYGL	20
204	HCV 3b	45	2	9	B_4403	AESGGVLAT	36

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205	HCV 3b	45	2	10	B_4403	AESGgVLATA	27
206	HCV 3b	46	28	10	A24	SGEPcITNTL	12.096
207	HCV 3b	46	24	10	B7	SVRIsgEPCI	20.000
208	HCV 3b	46	38	10	B8	CPRErRGSKS	12.000
209	HCV 3b	46	44	10	B_3501	GSKSnSIAEL	15.000
210	HCV 3b	46	38	10	B_3501	CPRErRGSKS	12.000
211	HCV 3b	46	51	9	B_4403	AELSNRHPI	16.000
212	HCV 3b	46	19	9	B_4403	DEQThSVRI	12.000
213	HCV 3b	46	19	10	B_4403	DEQThSVRIS	36.000
214	HCV 3b	46	51	10	B_4403	AELSnRHPIA	16.000
215	HCV 3b	47	24	10	A_0201	RLYRtRKewV	599.816
216	HCV 3b	47	17	9	B7	NALPLWGRL	12.000
217	HCV 3b	47	1	9	B_3501	MSKGVQGS	30.000
218	HCV 3b	47	17	10	B_4403	NALPLWGRLY	12.000
219	HCV 3b	48	1	9	B7	MPGASARVL	80.000
220	HCV 3b	48	16	9	B7	EAPPLCSSL	12.000
221	HCV 3b	48	11	10	B7	RVRRsEAPPL	200.000
222	HCV 3b	48	1	9	B_3501	MPGASARVL	20.000
223	HCV 3b	48	15	9	B_4403	SEAPPLCSS	48.000
224	HCV 3b	48	15	10	B_4403	SEAPpLCSLL	32.000
225	HCV 3b	49	28	9	B7	APCARFTSI	24.000
226	HCV 3b	49	4	9	B7	RAGRRSVNL	12.000
227	HCV 3b	50	63	9	A_0201	ILLRSRYRI	65.622
228	HCV 3b	50	64	10	A3	LLRSrYRIHR	24.000
229	HCV 3b	50	8	9	B7	AARSSRVCL	540.000
230	HCV 3b	50	57	9	B7	TGRDRHILL	40.000
231	HCV 3b	50	7	10	B7	RAARsSRVCL	18.000
232	HCV 3b	50	57	9	B8	TGRDRHILL	24.000
233	HCV 3b	50	8	9	B8	AARSSRVCL	16.000
234	HCV 3b	50	5	10	B8	NLRAaRSSRV	24.000
235	HCV 3b	50	8	10	B8	AARSSRVCLA	16.000
236	HCV 3b	50	44	9	B_3501	TPCPGREIF	20.000
237	HCV 3b	50	49	9	B_4403	REIFPVDET	60.000
238	HCV 3b	50	55	9	B_4403	DETGRDRHI	18.000
239	HCV 3b	50	1	9	B_4403	MEGPNLRAA	12.000
240	HCV 3b	51	16	10	A_0201	LVAETpQSCL	13.028
241	HCV 3b	51	25	9	A3	LLYVISKR	15.000
242	HCV 3b	51	24	9	A3	CLLYVISKR	13.500
243	HCV 3b	51	16	10	B7	LVAETpQSCL	30.000
244	HCV 3b	51	36	9	B_4403	SEEGYLQRT	18.000
245	HCV 3b	51	18	9	B_4403	AETPQSCLL	16.000
246	HCV 3b	51	18	10	B_4403	AETPqSCLLY	480.000
247	HCV 3b	51	36	10	B_4403	SEEGyLRQTA	12.000
248	HCV 3b	52				no hits	
249	HCV 3b	53				no hits	

Table 41  
3b (4-6)

No.	Strain	ORF	Start	AA	HLA	Peptide sequence	Score
1	HCV 3b	1				no hits	
2	HCV 3b	2				no hits	
3	HCV 3b	3	4	9	B8	DSRVKATSV	24.000

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4	HCV 3b	4	1	9	A_0201	MLHSLFGRV	29.205
5	HCV 3b	4	9	10	A1	VLEPvGRPHR	180.000
6	HCV 3b	4	4	10	A_0201	SLFGGrVLEPV	290.025
7	HCV 3b	4	1	10	A_0201	MLHSLFGRVL	11.316
8	HCV 3b	5	1	9	A_0201	MVIEHLQSV	97.561
9	HCV 3b	5	7	9	B_3501	QSVEGNLLL	10.000
10	HCV 3b	6	2	9	B_3501	RPVRLTSGF	40.000
11	HCV 3b	7	14	9	A_0201	GLTRRSIAV	69.552
12	HCV 3b	7	4	10	A1	YTEGdLVPOK	90.000
13	HCV 3b	8	17	9	B7	APQGTRVIV	18.000
14	HCV 3b	9	23	9	A_0201	YMPAQHCST	24.757
15	HCV 3b	9	24	9	B_3501	MPAQHCSTY	40.000
16	HCV 3b	9	8	10	A24	RYESvHPLHC	15.000
17	HCV 3b	9	6	10	B_4403	CERYeSVHPL	12.000
18	HCV 3b	10	1	9	B_3501	MPHDDDTTY	120.000
19	HCV 3b	11				no hits	
20	HCV 3b	12	60	9	A_0201	CLIQHRAYT	40.986
21	HCV 3b	12	18	9	A_0201	FAIKGDFS	25.773
22	HCV 3b	12	90	9	A24	RTTPIGEEL	14.784
23	HCV 3b	12	13	9	A3	CQWEGFAIK	13.500
24	HCV 3b	12	53	9	B7	QPHPGCLCL	80.000
25	HCV 3b	12	25	9	B7	SVTGEAHL	20.000
26	HCV 3b	12	53	9	B_3501	QPHPGCLCL	20.000
27	HCV 3b	12	95	9	B_4403	GEELAVCGV	18.000
28	HCV 3b	12	2	9	B_4403	AEYKVSSSL	12.000
29	HCV 3b	12	68	10	A_0201	TQYGgSVLRV	51.901
30	HCV 3b	12	79	10	A_0201	FIADdHVIGA	29.632
31	HCV 3b	12	50	10	A24	QYRQpHPGCL	200.000
32	HCV 3b	12	66	10	A24	AYTQyGGSVL	200.000
33	HCV 3b	12	23	10	A24	DFSvtGEAHL	20.000
34	HCV 3b	12	52	10	A24	RQPHpGCLCL	12.000
35	HCV 3b	12	15	10	B_4403	WEGFaIKGDF	40.000
36	HCV 3b	12	117	10	B_4403	TDVGvNPIGF	15.000
37	HCV 3b	13	16	9	A_0201	GLGGRGQHL	21.362
38	HCV 3b	13	9	9	A24	PYCRTQEGE	20.000
39	HCV 3b	13	18	9	B7	GGRGQHLHL	40.000
40	HCV 3b	14	4	9	A_0201	WLLLTAVTI	177.566
41	HCV 3b	14	2	9	A_0201	EQWLLLTAV	10.096
42	HCV 3b	14	6	9	A3	LLTAVTIFK	60.000
43	HCV 3b	14	6	10	A_0201	LLTAvTIFKI	236.595
44	HCV 3b	14	5	10	A3	LLLTaVTIFK	90.000
45	HCV 3b	14	9	10	B7	AVTIfKITAL	60.000
46	HCV 3b	15	5	9	A1	SYEHSLEY	11.250
47	HCV 3b	15	60	9	A_0201	KVGLICFNV	123.542
48	HCV 3b	15	20	9	A_0201	RIMPQSVRV	35.385
49	HCV 3b	15	67	9	A_0201	NVLHPPIDV	22.517
50	HCV 3b	15	21	9	A_0201	IMPQSVRVV	16.105
51	HCV 3b	15	50	9	A_0201	VLPETIGRA	10.353
52	HCV 3b	15	58	9	A24	AFKVGLICF	10.000
53	HCV 3b	15	28	9	A3	VVYQTPWRK	30.000
54	HCV 3b	15	75	9	B7	VARGSPSTSL	120.000
55	HCV 3b	15	55	9	B7	IGRAFKVGL	40.000

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56	HCV 3b	15	43	9	B7	AGKRGIMVL	12.000
57	HCV 3b	15	75	9	B8	VARGSPSTSL	16.000
58	HCV 3b	15	22	9	B_3501	MPQSVRVVY	40.000
59	HCV 3b	15	14	9	B_4403	REVHSARIM	12.000
60	HCV 3b	15	11	9	B_4403	LEYREVHSA	12.000
61	HCV 3b	15	2	10	A_0201	FMSSyEHSDL	70.971
62	HCV 3b	15	54	10	A_0201	TIGRaFKVGL	11.162
63	HCV 3b	15	12	10	A24	EYREvHSARI	60.000
64	HCV 3b	15	60	10	A24	KVGLiCFNVL	11.520
65	HCV 3b	15	48	10	A3	IMVLpETIGR	12.000
66	HCV 3b	15	90	10	B7	HPHTsKPPAL	80.000
67	HCV 3b	15	42	10	B7	AAGKrGIMVL	36.000
68	HCV 3b	15	40	10	B7	GPAAGKRGIM	30.000
69	HCV 3b	15	74	10	B7	DVARgSPSTSL	20.000
70	HCV 3b	15	60	10	B7	KVGLiCFNVL	20.000
71	HCV 3b	15	90	10	B8	HPHTsKPPAL	16.000
72	HCV 3b	15	40	10	B_3501	GPAAGKRGIM	40.000
73	HCV 3b	15	90	10	B_3501	HPHTsKPPAL	20.000
74	HCV 3b	15	4	10	B_3501	SSYEHSDLEY	20.000
75	HCV 3b	15	75	10	B_3501	VARGsPTSly	18.000
76	HCV 3b	16				no hits	
77	HCV 3b	17	2	9	B_4403	SEGSCDAPY	240.000
78	HCV 3b	17	14	9	B_4403	DERNVPHEV	18.000
79	HCV 3b	17	1	10	A1	MSEGS CDAPY	135.000
80	HCV 3b	18	9	9	A3	KMKsAPSRr	12.000
81	HCV 3b	18	11	10	A_0201	KSAPsRRWAV	11.918
82	HCV 3b	18	1	10	B7	MPRRrLRsKM	300.000
83	HCV 3b	18	1	10	B_3501	MPRRrLRsKM	120.000
84	HCV 3b	19				no hits	
85	HCV 3b	20	6	9	B_3501	RAGDPSPQM	24.000
86	HCV 3b	20	6	10	A24	RAGDpSPQML	11.520
87	HCV 3b	20	6	10	B7	RAGDpSPQML	12.000
88	HCV 3b	20	6	10	B_3501	RAGDpSPQML	12.000
89	HCV 3b	21	3	9	A_0201	LLWRQSRSM	14.020
90	HCV 3b	21	3	10	A_0201	LLWRqSRsMT	105.148
91	HCV 3b	22	22	9	A_0201	YLLLRrMCL	363.588
92	HCV 3b	22	39	9	A_0201	KISLPGQGV	33.472
93	HCV 3b	22	29	9	A_0201	CLSLPVsST	17.140
94	HCV 3b	22	20	9	A_0201	ILYLLLRrM	12.432
95	HCV 3b	22	15	9	A24	RTQRWILYL	12.000
96	HCV 3b	22	31	9	A3	SLPVsSTGK	20.000
97	HCV 3b	22	16	9	B7	TQRWILYLL	40.000
98	HCV 3b	22	24	9	B7	LLRRMCLSL	40.000
99	HCV 3b	22	2	9	B_3501	TFRPILRQF	60.000
100	HCV 3b	22	23	10	A_0201	LLLRrMCLSL	134.369
101	HCV 3b	22	41	10	A_0201	SLPGqGVPRr	17.140
102	HCV 3b	22	21	10	A24	LYLLLRrMCL	300.000
103	HCV 3b	22	15	10	A24	RTQRwILYLL	16.800
104	HCV 3b	22	16	10	B7	TQRWILYLLL	40.000
105	HCV 3b	22	47	10	B7	VPRThSTHRA	20.000
106	HCV 3b	22	12	10	B7	ASHRtQRWIL	18.000
107	HCV 3b	23				no hits	



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108	HCV 3b	24	1	9	B_4403	MEVNRAQGA	12.000
109	HCV 3b	24	3	10	B7	VNRAqGAGPL	40.000
110	HCV 3b	25				no hits	
111	HCV 3b	26	42	9	A_0201	RVYSAQWCI	21.909
112	HCV 3b	26	21	9	B7	APRHNCRRS	12.000
113	HCV 3b	26	38	9	B8	CARGRVYSA	16.000
114	HCV 3b	26	7	10	B_3501	RSWPpPRNEY	20.000
115	HCV 3b	26	11	10	B_3501	PPRNeYPPPY	12.000
116	HCV 3b	26	35	10	B_3501	ASNCaGRVY	10.000
117	HCV 3b	27	2	9	B_4403	RERVCLAPW	18.000
118	HCV 3b	28	6	10	B7	LPRRsRGHSV	40.000
119	HCV 3b	28	6	10	B8	LPRRsRGHSV	48.000
120	HCV 3b	28	6	10	B_3501	LPRRsRGHSV	12.000
121	HCV 3b	28	9	10	B_3501	RSRGhSVLVI	12.000
122	HCV 3b	29	2	9	A_0201	LQVPLGVWL	20.251
123	HCV 3b	29	1	10	A_0201	MLQVpLG VWL	199.738
124	HCV 3b	29	4	10	B7	VPLGvWLPNL	80.000
125	HCV 3b	29	4	10	B_3501	VPLGvWLPNL	20.000
126	HCV 3b	30	21	9	A_0201	SLGPAVLFPV	159.970
127	HCV 3b	30	18	9	A_0201	SMQSLGPAV	50.232
128	HCV 3b	30	5	9	A_0201	PLHERRQWL	10.598
129	HCV 3b	30	27	9	B7	LPVTRSGHL	80.000
130	HCV 3b	30	27	9	B8	LPVTRSGHL	16.000
131	HCV 3b	30	27	9	B_3501	LPVTRSGHL	20.000
132	HCV 3b	30	4	9	B_3501	SPLHERRQW	15.000
133	HCV 3b	30	4	10	B7	SPLHeRRQWL	120.000
134	HCV 3b	30	4	10	B8	SPLHeRRQWL	16.000
135	HCV 3b	30	27	10	B_3501	LPVTrSGHLY	40.000
136	HCV 3b	30	4	10	B_3501	SPLHeRRQWL	20.000
137	HCV 3b	31	11	9	B7	VVGhTRNNL	30.000
138	HCV 3b	31	10	10	B7	QVVGhTRNNL	30.000
139	HCV 3b	32	23	9	A24	RFQWGREGI	15.000
140	HCV 3b	32	24	10	A_0201	FQWGREGILL	82.694
141	HCV 3b	32	23	10	A24	RFQWGREGIL	60.000
142	HCV 3b	32	9	10	B7	IPVQhKRRGL	120.000
143	HCV 3b	32	9	10	B8	IPVQhKRRGL	16.000
144	HCV 3b	32	9	10	B_3501	IPVQhKRRGL	20.000
145	HCV 3b	33	36	9	A24	RCLRRLLCL	12.000
146	HCV 3b	33	34	9	B7	RTRCLRRLL	60.000
147	HCV 3b	33	32	10	B7	ATRTrCLRRLL	120.000
148	HCV 3b	34	5	10	A_0201	MQPGtRRNPV	11.988
149	HCV 3b	34	8	10	B7	GTRRnPVVPL	60.000
150	HCV 3b	35	39	9	A1	RIDVHVLLR	25.000
151	HCV 3b	35	30	9	B7	LPSSSCRRL	80.000
152	HCV 3b	35	37	9	B7	RLRIDVHVL	40.000
153	HCV 3b	35	16	9	B7	VVAHCGHDL	20.000
154	HCV 3b	35	3	9	B7	MAILASQSL	12.000
155	HCV 3b	35	30	9	B_3501	LPSSSCRRL	20.000
156	HCV 3b	35	5	10	A_0201	ILASqSLNGA	19.425
157	HCV 3b	35	2	10	A_0201	SMAILASQSL	15.428
158	HCV 3b	35	37	10	A24	RLRIdVHVLL	11.200
159	HCV 3b	35	37	10	B7	RLRIdVHVLL	40.000

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160	HCV 3b	35	15	10	B7	VVVAhCGHDL	20.000
161	HCV 3b	35	29	10	B7	ALPSsSCRRL	12.000
162	HCV 3b	35	40	10	B_4403	IDVHvLLRTF	15.000
163	HCV 3b	36	1	9	B7	MVCPHWDHL	20.000
164	HCV 3b	37	22	9	B_3501	RPHTQCSCW	20.000
165	HCV 3b	37	4	10	B8	CCRFrRRARI	80.000
166	HCV 3b	37	16	10	B8	SARSrRRPHT	16.000
167	HCV 3b	38	8	9	A1	GLEAARHSY	45.000
168	HCV 3b	38	8	9	A3	GLEAARHSY	12.000
169	HCV 3b	38	1	9	B7	MALPEGGGL	12.000
170	HCV 3b	38	2	10	A_0201	ALPEgGGLA	20.369
171	HCV 3b	39				no hits	
172	HCV 3b	40	41	9	A_0201	ILAFPPWAM	63.342
173	HCV 3b	40	19	9	A_0201	AVGNgVSLV	13.997
174	HCV 3b	40	26	9	A_0201	LVLVRTAQL	11.757
175	HCV 3b	40	36	9	A24	RYRPHILAF	240.000
176	HCV 3b	40	43	9	A24	AFPPWAMSL	36.000
177	HCV 3b	40	69	9	A24	SFLRAPATL	30.000
178	HCV 3b	40	27	9	A3	VLVRTAQLK	30.000
179	HCV 3b	40	70	9	B7	FLRAPATLL	60.000
180	HCV 3b	40	26	9	B7	LVLVRTAQL	20.000
181	HCV 3b	40	73	9	B7	APATLLSSV	12.000
182	HCV 3b	40	54	9	B8	TARARCLHA	16.000
183	HCV 3b	40	10	10	A_0201	NQLErSSWPA	57.308
184	HCV 3b	40	25	10	A_0201	SLVLvRTAQL	21.362
185	HCV 3b	40	69	10	A24	SFLRaPATLL	30.000
186	HCV 3b	40	27	10	A3	VLVRTAQLKR	12.000
187	HCV 3b	40	51	10	B7	LARTaRARCL	120.000
188	HCV 3b	40	3	10	B7	FPPTpTVNQL	80.000
189	HCV 3b	40	17	10	B7	WPAVgNGVSL	80.000
190	HCV 3b	40	19	10	B7	AVGNgVSLVL	60.000
191	HCV 3b	40	62	10	B7	ARRGgIPSFL	12.000
192	HCV 3b	40	42	10	B7	LAFFpWAMSL	12.000
193	HCV 3b	40	51	10	B8	LARTaRARCL	320.000
194	HCV 3b	40	33	10	B8	QLKRYRPHIL	160.000
195	HCV 3b	40	3	10	B_3501	FPPTpTVNQL	20.000
196	HCV 3b	40	38	10	B_3501	RPHILAFPPW	20.000
197	HCV 3b	40	17	10	B_3501	WPAVgNGVSL	20.000
198	HCV 3b	41	1	9	A_0201	MIAGKSSGV	16.258
199	HCV 3b	42	19	9	A_0201	MMIFPNQEL	26.228
200	HCV 3b	42	25	9	B_4403	QELTGvWRA	24.000
201	HCV 3b	42	1	9	B_4403	MEKKWVINT	12.000
202	HCV 3b	42	18	10	A_0201	NMMIfPNQEL	57.085
203	HCV 3b	42	6	10	A_0201	VINTmRTQMv	16.258
204	HCV 3b	42	13	10	A3	QMVGaNMIF	13.500
205	HCV 3b	42	18	10	B7	NMMIfPNQEL	18.000
206	HCV 3b	42	22	10	B_3501	FPNQeLTGVW	10.000
207	HCV 3b	42	25	10	B_4403	QELTgVWRAV	12.000
208	HCV 3b	43	39	9	A_0201	ALLAAVALM	42.278
209	HCV 3b	43	10	9	A_0201	VLSSSTPQL	36.316
210	HCV 3b	43	33	9	A24	GFLRPAALL	30.000
211	HCV 3b	43	38	9	B7	AALLAAVAL	36.000

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212	HCV 3b	43	3	9	B7	SVKARRAVL	30.000
213	HCV 3b	43	3	9	B8	SVKARRAVL	80.000
214	HCV 3b	43	26	9	B_3501	SPQTRKDGf	20.000
215	HCV 3b	43	26	10	B7	SPQTRKDGfL	80.000
216	HCV 3b	43	9	10	B7	AVLSsSTPQL	60.000
217	HCV 3b	43	2	10	B7	ASVKARRAVL	18.000
218	HCV 3b	43	26	10	B8	SPQTRKDGfL	16.000
219	HCV 3b	43	26	10	B_3501	SPQTRKDGfL	20.000
220	HCV 3b	44	32	9	A_0201	VLMSCSVTV	437.482
221	HCV 3b	44	46	9	A_0201	VSYENPKGV	10.126
222	HCV 3b	44	5	9	A24	MYSRSVRAL	200.000
223	HCV 3b	44	47	9	A24	SYENPKGVf	150.000
224	HCV 3b	44	26	9	A24	WYIPSSVLM	45.000
225	HCV 3b	44	53	9	B7	GVFFDVHIL	20.000
226	HCV 3b	44	50	9	B_3501	NPKGVFFDV	12.000
227	HCV 3b	44	64	9	B_3501	CSTRCLGEY	10.000
228	HCV 3b	44	8	9	B_3501	RSVRALIAF	10.000
229	HCV 3b	44	48	9	B_4403	YENPKGVFF	120.000
230	HCV 3b	44	40	9	B_4403	VESKQRVSY	120.000
231	HCV 3b	44	39	10	A1	TVESkQRVSY	90.000
232	HCV 3b	44	31	10	A_0201	SVLMsCSVTV	22.517
233	HCV 3b	44	47	10	A24	SYENpKGVFF	150.000
234	HCV 3b	44	5	10	A24	MYSRsVRALI	70.000
235	HCV 3b	44	52	10	A24	KGVFFdVHIL	12.000
236	HCV 3b	44	53	10	A3	GVFFdVHILR	18.000
237	HCV 3b	44	60	10	B7	ILRRcSTRCL	40.000
238	HCV 3b	44	18	10	B_3501	ASGSrSQHWY	10.000
239	HCV 3b	44	46	10	B_3501	VSYEnPKGVf	10.000
240	HCV 3b	45	37	9	A_0201	SQTERIWFM	195.933
241	HCV 3b	45	14	9	A_0201	TLNTSFFAI	114.969
242	HCV 3b	45	13	9	A_0201	FTLNTSFFA	37.463
243	HCV 3b	45	21	9	A_0201	AIMVVGIGV	35.385
244	HCV 3b	45	82	9	A_0201	FTPDARSFT	10.736
245	HCV 3b	45	88	9	A24	SFTSLSTFL	24.000
246	HCV 3b	45	7	9	A24	RPPFAGFTL	12.000
247	HCV 3b	45	12	9	A24	GFTLNTSFF	10.000
248	HCV 3b	45	5	9	A3	GLRPPFAGF	40.500
249	HCV 3b	45	7	9	B7	RPPFAGFTL	80.000
250	HCV 3b	45	23	9	B7	MVVGIGVLL	20.000
251	HCV 3b	45	7	9	B_3501	RPPFAGFTL	40.000
252	HCV 3b	45	74	9	B_3501	SSKESRRPF	30.000
253	HCV 3b	45	58	9	B_3501	YPYFDRPEW	15.000
254	HCV 3b	45	87	9	B_3501	RSFTSLSTF	10.000
255	HCV 3b	45	50	9	B_4403	KERTSFALY	120.000
256	HCV 3b	45	13	10	A_0201	FTLNTsFFAI	27.178
257	HCV 3b	45	22	10	A_0201	IMVVgIGVLL	26.228
258	HCV 3b	45	37	10	A_0201	SQTERIWfMA	20.363
259	HCV 3b	45	47	10	A_0201	LLDKERTSFA	18.580
260	HCV 3b	45	14	10	A_0201	TLNTsFFAIM	14.706
261	HCV 3b	45	30	10	A_0201	LLSSnKSSQT	12.668
262	HCV 3b	45	44	10	A_0201	FMALlDKERT	12.131
263	HCV 3b	45	41	10	A3	RIWFmALLDK	30.000

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264	HCV 3b	45	21	10	B7	AIMVvGIGVL	36.000
265	HCV 3b	45	83	10	B7	TPDArSFTSL	24.000
266	HCV 3b	45	80	10	B_3501	RPFTpDARSF	60.000
267	HCV 3b	45	35	10	B_3501	KSSQtERIWF	15.000
268	HCV 3b	45	36	10	B_3501	SSQtERIWFM	10.000
269	HCV 3b	45	87	10	B_3501	RSFTsLSTFL	10.000
270	HCV 3b	45	22	9	A1	TVDQESASR	10.000
271	HCV 3b	46	97	9	B_3501	DPSSLIVLF	20.000
272	HCV 3b	46	88	9	B_3501	RARSAADTF	18.000
273	HCV 3b	46	71	9	B_4403	EDVPVPSGF	30.000
274	HCV 3b	46	43	9	B_4403	DEYDSTSDS	18.000
275	HCV 3b	46	14	10	A_0201	TLCSsESLTV	69.552
276	HCV 3b	46	6	10	A24	EYDIEQQTTL	200.000
277	HCV 3b	46	95	10	A24	TFDPsSLIVL	24.000
278	HCV 3b	46	97	10	B7	DPSSLIVLFL	80.000
279	HCV 3b	46	33	10	B7	SPGSpSRGGM	30.000
280	HCV 3b	46	92	10	B7	AADTFdPSSL	10.800
281	HCV 3b	46	33	10	B_3501	SPGSpSRGGM	40.000
282	HCV 3b	46	36	10	B_3501	SPSRgGMDEY	40.000
283	HCV 3b	46	97	10	B_3501	DPSSLIVLFL	20.000
284	HCV 3b	46	70	10	B_4403	EEDVpVPSGF	60.000
285	HCV 3b	46	18	10	B_4403	SESLEVDQES	12.000
286	HCV 3b	46	43	10	B_4403	DEYDsTSDSS	12.000
287	HCV 3b	46	56	10	B_4403	GESPdSAVDS	12.000
288	HCV 3b	47	17	9	A_0201	ILMDPFLTC	243.428
289	HCV 3b	47	16	9	A_0201	AILMDPFLT	21.989
290	HCV 3b	47	10	9	B7	AQRPDPAIL	120.000
291	HCV 3b	47	39	9	B7	TPSPRHPTPL	80.000
292	HCV 3b	47	30	9	B7	SPQGQRVVI	12.000
293	HCV 3b	47	39	9	B8	TPSPRHPTPL	16.000
294	HCV 3b	47	14	9	B_3501	DPAILMDPF	20.000
295	HCV 3b	47	39	9	B_3501	TPSPRHPTPL	20.000
296	HCV 3b	47	18	10	A_0201	LMDFLTCPV	34.158
297	HCV 3b	47	8	10	A_0201	MLAQrPDPAI	17.736
298	HCV 3b	47	14	10	B7	DPAILMDPFL	80.000
299	HCV 3b	47	10	10	B7	AQRpdPAILM	45.000
300	HCV 3b	47	9	10	B7	LAQRpDPAIL	12.000
301	HCV 3b	47	41	10	B_3501	SPRHtPLYPF	60.000
302	HCV 3b	47	39	10	B_3501	TPSPrHTPLY	40.000
303	HCV 3b	47	14	10	B_3501	DPAILMDPFL	20.000
304	HCV 3b	48	6	9	A_0201	GMILAESQV	50.232
305	HCV 3b	48	26	9	A_0201	QMSCNQSP	15.428
306	HCV 3b	48	8	9	A3	ILAESQVLK	30.000
307	HCV 3b	48	1	9	B7	MPGTLG MIL	80.000
308	HCV 3b	48	1	9	B_3501	MPGTLG MIL	20.000
309	HCV 3b	48	10	9	B_4403	AESQVLKSL	27.000
310	HCV 3b	48	25	10	B7	SQMScNQSP	12.000
311	HCV 3b	48	18	10	B_3501	LSTIqTQSQM	10.000
312	HCV 3b	49	123	9	A1	VTEAVKAIR	45.000
313	HCV 3b	49	104	9	A1	ATQPPRMLK	25.000
314	HCV 3b	49	47	9	A1	GSSPPMILK	15.000
315	HCV 3b	49	109	9	A_0201	RMLKNIVWL	722.126

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316	HCV 3b	49	110	9	A_0201	MLKNIVWLV	71.386
317	HCV 3b	49	148	9	A_0201	WIPLTKFHM	18.225
318	HCV 3b	49	74	9	A_0201	TLPMMPPT	17.140
319	HCV 3b	49	122	9	A_0201	LVTEAVKAI	14.634
320	HCV 3b	49	116	9	A_0201	WLVVRGLVT	14.054
321	HCV 3b	49	34	9	A_0201	KMAGRRLTM	12.558
322	HCV 3b	49	114	9	A_0201	IVWLVRGL	12.132
323	HCV 3b	49	146	9	A24	RYWIPLTKF	220.000
324	HCV 3b	49	109	9	A24	RMLKNIVWL	12.000
325	HCV 3b	49	129	9	B7	AIREATAGL	120.000
326	HCV 3b	49	143	9	B7	RPARYWIPL	80.000
327	HCV 3b	49	186	9	B7	KPRTLNLNC	20.000
328	HCV 3b	49	114	9	B7	IVWLVRGL	20.000
329	HCV 3b	49	103	9	B7	VATQPPRML	18.000
330	HCV 3b	49	182	9	B7	ALCSKPRTL	12.000
331	HCV 3b	49	184	9	B8	CSKPRTLNL	80.000
332	HCV 3b	49	143	9	B_3501	RPARYWIPL	40.000
333	HCV 3b	49	58	9	B_3501	RAPETPAPY	24.000
334	HCV 3b	49	139	9	B_3501	GSVERPARY	20.000
335	HCV 3b	49	184	9	B_3501	CSKPRTLNL	15.000
336	HCV 3b	49	186	9	B_3501	KPRTLNLNC	12.000
337	HCV 3b	49	71	9	B_3501	SSNTLPMPM	10.000
338	HCV 3b	49	141	9	B_4403	VERPARYWI	12.000
339	HCV 3b	49	92	10	A1	NAEDaAGPAR	18.000
340	HCV 3b	49	109	10	A_0201	RMLKnIVWLV	3.206.057
341	HCV 3b	49	180	10	A_0201	WLALcSKPRT	34.279
342	HCV 3b	49	121	10	A_0201	GLVTeAVKAI	23.995
343	HCV 3b	49	114	10	A_0201	IVWLvVRGLV	11.163
344	HCV 3b	49	128	10	A24	KAIReATAGL	12.000
345	HCV 3b	49	66	10	B7	YPAStSSNTL	80.000
346	HCV 3b	49	172	10	B7	MGRIsASCWL	40.000
347	HCV 3b	49	45	10	B7	VVGSSpPMIL	30.000
348	HCV 3b	49	102	10	B7	CVATqPPRML	30.000
349	HCV 3b	49	181	10	B7	LALCsKPRTL	12.000
350	HCV 3b	49	128	10	B7	KAIReATAGL	12.000
351	HCV 3b	49	80	10	B7	PPTAaPAKPL	12.000
352	HCV 3b	49	118	10	B7	VVRGLVTEAV	10.000
353	HCV 3b	49	181	10	B8	LALCsKPRTL	16.000
354	HCV 3b	49	183	10	B8	LCSKpRTLNL	16.000
355	HCV 3b	49	66	10	B_3501	YPAStSSNTL	20.000
356	HCV 3b	49	43	10	B_3501	SSVVgSSPPM	10.000
357	HCV 3b	49	68	10	B_3501	ASTSsNTLPM	10.000
358	HCV 3b	49	70	10	B_3501	TSSNtLPMPM	10.000
359	HCV 3b	49	131	10	B_4403	REATaGLPGS	12.000
360	HCV 3b	49	124	10	B_4403	TEAVkAIREA	12.000
361	HCV 3b	50				no hits	
362	HCV 3b	51	4	9	A_0201	MMYLIVIGCV	81.705
363	HCV 3b	51	3	9	A_0201	AMMYLVIGC	30.534
364	HCV 3b	51	5	9	A24	MYLVIGCVM	52.500
365	HCV 3b	51	3	10	A_0201	AMMYLVIGCV	55.572
366	HCV 3b	51	6	10	A_0201	YLVIGCVMQM	52.561
367	HCV 3b	52	12	10	A_0201	GLAFaRAQTV	69.552

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368	HCV 3b	53	5	9	B_3501	RSPGVTNRY	20.000
369	HCV 3b	53	5	9	B_4403	RSPGVTNRY	10.125
370	HCV 3b	53	12	10	A24	RYIPgLRPV	21.600
371	HCV 3b	53	16	10	A3	GLPRpVRPLR	18.000
372	HCV 3b	53	8	10	B7	GVINrYIPGL	20.000
373	HCV 3b	54	17	9	A3	TLQSITVSK	30.000
374	HCV 3b	54	22	10	A_0201	TVSKspVYPV	13.997
375	HCV 3b	54	23	10	B_3501	VSKSpVYPVM	30.000
376	HCV 3b	54	9	10	B_3501	KSTYcSTATL	10.000
377	HCV 3b	55	6	9	B7	VAVASTVSL	12.000
378	HCV 3b	55	5	10	B7	GVAVaSTVSL	20.000
379	HCV 3b	56	1	9	B7	MVRVPVRML	300.000
380	HCV 3b	57	3	9	B8	VPKPRVAAT	16.000
381	HCV 3b	57	12	9	B_4403	DGFSTRTEY	13.500
382	HCV 3b	57	5	10	B_3501	KPRVaATDGF	120.000
383	HCV 3b	57	11	10	B_4403	TDGFsTRTEY	22.500
384	HCV 3b	58	40	9	A_0201	GLVLSKLAV	69.552
385	HCV 3b	58	65	9	A24	RYRSEEPHV	10.000
386	HCV 3b	58	45	9	A3	KLAVESPLR	12.000
387	HCV 3b	58	33	9	B7	EPLRQDSGL	80.000
388	HCV 3b	58	8	9	B7	TPLVHTAAL	80.000
389	HCV 3b	58	86	9	B7	QPTRSWSTL	80.000
390	HCV 3b	58	2	9	B7	NCRAFATPL	40.000
391	HCV 3b	58	2	9	B8	NCRAFATPL	16.000
392	HCV 3b	58	8	9	B_3501	TPLVHTAAL	20.000
393	HCV 3b	58	33	9	B_3501	EPLRQDSGL	20.000
394	HCV 3b	58	86	9	B_3501	QPTRSWSTL	20.000
395	HCV 3b	58	58	9	B_3501	TSASRVTRY	10.000
396	HCV 3b	58	68	9	B_4403	SEEPHVQGS	48.000
397	HCV 3b	58	58	9	B_4403	TSASRVTRY	27.000
398	HCV 3b	58	45	10	A3	KLAVeSPLRR	24.000
399	HCV 3b	58	70	10	B7	EPHVqGSRDL	80.000
400	HCV 3b	58	18	10	B7	IPTTcPEGHM	30.000
401	HCV 3b	58	7	10	B7	ATPLvHTAAL	12.000
402	HCV 3b	58	18	10	B_3501	IPTTcPEGHM	40.000
403	HCV 3b	58	70	10	B_3501	EPHVqGSRDL	20.000
404	HCV 3b	58	43	10	B_3501	LSKLAVESPL	15.000
405	HCV 3b	58	57	10	B_4403	RTSAsRVTRY	13.500
406	HCV 3b	59	1	9	A1	MTPTTVVPK	10.000
407	HCV 3b	59	26	9	A_0201	FLSLPVRLV	147.172
408	HCV 3b	59	5	9	A_0201	TVVPKKVWV	33.472
409	HCV 3b	59	28	9	A_0201	SLPVRLVTI	23.995
410	HCV 3b	59	10	9	A_0201	KVWVAVDST	21.348
411	HCV 3b	59	25	9	A24	TFLSLPVRL	36.000
412	HCV 3b	59	21	9	B7	SPVTTFLSL	80.000
413	HCV 3b	59	52	9	B7	DSRRHPIFL	40.000
414	HCV 3b	59	40	9	B7	SPRVCWAYA	20.000
415	HCV 3b	59	21	9	B_3501	SPVTTFLSL	20.000
416	HCV 3b	59	52	9	B_3501	DSRRHPIFL	15.000
417	HCV 3b	59	7	9	B_3501	VPKKVWVAV	12.000
418	HCV 3b	59	39	9	B_3501	NSPRVCWAY	10.000
419	HCV 3b	59	37	9	B_3501	VNSPRVCW	10.000

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420	HCV 3b	59	1	10	A1	MTPPtVVPKK	10.000
421	HCV 3b	59	28	10	A_0201	SLPVrLVTIV	65.588
422	HCV 3b	59	6	10	A_0201	VVPKkVWVAV	17.588
423	HCV 3b	59	26	10	A_0201	FLSLpVRLVT	14.054
424	HCV 3b	59	10	10	A_0201	KVWVaVDSTC	12.628
425	HCV 3b	60	21	9	A_0201	KMTGSVATA	28.883
426	HCV 3b	60	33	9	B7	RPSAAQSCM	20.000
427	HCV 3b	60	33	9	B_3501	RPSAAQSCM	80.000
428	HCV 3b	60	39	9	B_4403	SCMGDRWSY	18.000
429	HCV 3b	60	14	10	A_0201	TLISiGLKMT	17.140
430	HCV 3b	60	6	10	B7	AVSApQVITL	60.000
431	HCV 3b	60	9	10	B7	APQViTLISI	24.000
432	HCV 3b	60	11	10	B7	QVITLISIGL	20.000
433	HCV 3b	60	38	10	B_3501	QSCMGDRWSY	15.000
434	HCV 3b	61				no hits	
435	HCV 3b	62	33	9	A1	AASPLHMAY	25.000
436	HCV 3b	62	7	9	A24	GYSRLASKI	66.000
437	HCV 3b	62	52	9	A3	CLYHGDKVK	50.000
438	HCV 3b	62	45	9	B7	QIRRPiQCL	60.000
439	HCV 3b	62	3	9	B7	KIREGYSRL	40.000
440	HCV 3b	62	20	9	B7	LPRTSRGGT	30.000
441	HCV 3b	62	61	9	B7	NPRSRSTPA	20.000
442	HCV 3b	62	12	9	B7	ASKITLSRL	12.000
443	HCV 3b	62	63	9	B7	RSRSTPAPM	10.000
444	HCV 3b	62	61	9	B8	NPRSRSTPA	16.000
445	HCV 3b	62	63	9	B_3501	RSRSTPAPM	60.000
446	HCV 3b	62	35	9	B_3501	SPLHMAYWF	20.000
447	HCV 3b	62	12	9	B_3501	ASKITLSRL	15.000
448	HCV 3b	62	3	9	B_3501	KIREGYSRL	12.000
449	HCV 3b	62	33	9	B_4403	AASPLHMAY	12.000
450	HCV 3b	62	10	10	A3	RLASKITLSR	12.000
451	HCV 3b	62	38	10	A3	HMAyWFHQIR	12.000
452	HCV 3b	62	8	10	B7	YSRLaSKITL	40.000
453	HCV 3b	62	69	10	B7	APMVaSSSPV	36.000
454	HCV 3b	62	11	10	B7	LASKITLSRL	12.000
455	HCV 3b	62	8	10	B_3501	YSRLaSKITL	15.000
456	HCV 3b	62	32	10	B_3501	KAASpLHMAY	12.000
457	HCV 3b	63	3	9	B_4403	HAAQNATRY	13.500
458	HCV 3b	64	68	9	A_0201	TLNIEKFTV	403.402
459	HCV 3b	64	61	9	B7	CPPTNiLTL	80.000
460	HCV 3b	64	44	9	B7	SQRSPLVQL	60.000
461	HCV 3b	64	41	9	B7	SSRSQRSPL	60.000
462	HCV 3b	64	61	9	B_3501	CPPTNiLTL	20.000
463	HCV 3b	64	41	9	B_3501	SSRSQRSPL	15.000
464	HCV 3b	64	24	9	B_4403	SESVVEWSS	12.000
465	HCV 3b	64	66	10	A_0201	ILTLnIEKFT	69.676
466	HCV 3b	64	67	10	A_0201	LTLNiEKFTV	35.242
467	HCV 3b	64	43	10	A24	RSQRsPLVQL	12.000
468	HCV 3b	64	41	10	B8	SSRSqRSPLV	12.000
469	HCV 3b	64	40	10	B_3501	RSSRsQRSPL	10.000
470	HCV 3b	64	43	10	B_3501	RSQRsPLVQL	10.000
471	HCV 3b	65	1	9	A_0201	MLQGGAPQV	118.238

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472	HCV 3b	65	6	9	B7	APQVFTNPV	12.000
473	HCV 3b	65	8	10	A_0201	QVFTnPVLEFI	42.727
474	HCV 3b	65	6	10	B7	APQVfTNPVL	240.000
475	HCV 3b	65	20	10	B7	HPNHrPWGGL	120.000
476	HCV 3b	65	20	10	B_3501	HPNHrPWGGL	20.000
477	HCV 3b	65	6	10	B_3501	APQVfTNPVL	20.000
478	HCV 3b	65	30	10	B_4403	KEVNkKTSDS	18.000
479	HCV 3b	66				no hits	
480	HCV 3b	67	6	10	B7	DIRSgHPEEL	40.000
481	HCV 3b	67	8	10	B_3501	RSgHpeELNL	15.000
482	HCV 3b	68	4	10	B_3501	DPFELTNCKF	40.000
483	HCV 3b	69	3	9	B7	STMTTLAQL	12.000
484	HCV 3b	69	7	10	A3	TLAQLPCMEK	60.000
485	HCV 3b	70	3	9	A1	LLEQSLVSK	36.000
486	HCV 3b	70	1	9	A_0201	MLLLEQSLV	437.482
487	HCV 3b	70	39	9	A_0201	KEQPGRFPV	27.454
488	HCV 3b	70	11	9	A24	KYRPDAFLY	12.000
489	HCV 3b	70	3	9	A3	LLEQSLVSK	30.000
490	HCV 3b	70	9	9	B_3501	VSKYRPDAF	15.000
491	HCV 3b	70	4	9	B_4403	LEQSLVSKY	540.000
492	HCV 3b	70	37	9	B_4403	IEKEQPGRF	40.000
493	HCV 3b	70	39	9	B_4403	KEQPGRFPV	12.000
494	HCV 3b	70	3	10	A1	LLEQsLVSKY	45.000
495	HCV 3b	70	11	10	A24	KYRPdAFLYS	14.400
496	HCV 3b	70	2	10	A3	LLLEqSLVSK	67.500
497	HCV 3b	70	3	10	A3	LLEQsLVSKY	12.000
498	HCV 3b	70	13	10	B7	RPDAfLYSRL	24.000
499	HCV 3b	70	9	10	B_3501	VSKYrPDAFL	15.000
500	HCV 3b	70	13	10	B_3501	RPDAfLYSRL	12.000
501	HCV 3b	71	15	9	B7	RVSMtLPKL	20.000
502	HCV 3b	71	45	9	B_3501	HPAQPPQSF	20.000
503	HCV 3b	71	11	10	B7	NPHVrVSMTL	80.000
504	HCV 3b	71	38	10	B7	EPRGgKSHPA	20.000
505	HCV 3b	71	5	10	B7	YPMRsANPHV	12.000
506	HCV 3b	71	38	10	B8	EPRGgKSHPA	32.000
507	HCV 3b	71	11	10	B_3501	NPHVrVSMTL	20.000
508	HCV 3b	71	22	10	B_3501	KLRDLRRGSF	12.000
509	HCV 3b	72	15	9	A24	PYQAVPQGL	50.400
510	HCV 3b	72	22	9	A3	GLSRPNTTR	18.000
511	HCV 3b	72	23	9	B7	LSRPNTTRL	40.000
512	HCV 3b	72	25	9	B7	RPNTTRLVI	12.000
513	HCV 3b	72	8	9	B_3501	LPGHsQAPY	40.000
514	HCV 3b	72	25	9	B_3501	RPNTTRLVI	16.000
515	HCV 3b	72	23	9	B_3501	LSRPNTTRL	15.000
516	HCV 3b	72	22	10	A_0201	GLSRpNTTRL	21.362
517	HCV 3b	72	14	10	B7	APYQaVPQGL	240.000
518	HCV 3b	72	14	10	B_3501	APYQaVPQGL	20.000



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Table 4m  
H77 (1-3)

No.	Strain	ORF	Start	AA	HLA	Peptide sequence	Score
1	HCV H77	1	17	9	B7	SSRRKRLAM	15.000
2	HCV H77	1	2	9	B7	GATLHHESL	12.000
3	HCV H77	1	17	9	B8	SSRRKRLAM	20.000
4	HCV H77	1	14	10	B8	ELLSSRRKRL	16.000
5	HCV H77	1	17	9	B3501	SSRRKRLAM	30.000
6	HCV H77	1	16	10	B3501	LSSRKRLAM	10.000
7	HCV H77	1	15	9	A0201	LLSSRKRL	36.316
8	HCV H77	2	43	10	B4403	AASPTSWGTY	12.000
9	HCV H77	2	53	10	B3501	RSSAPLLEAL	10.000
10	HCV H77	2	64	10	B3501	GPWRMASGFW	10.000
11	HCV H77	2	64	9	B3501	GPWRMASGF	20.000
12	HCV H77	2	44	9	B3501	ASPTSWGTY	10.000
13	HCV H77	2	26	9	B3501	TPGVGRAIW	10.000
14	HCV H77	2	5	10	B7	VAGGRDGSC	12.000
15	HCV H77	2	32	10	B7	AIWVRSSIPL	12.000
16	HCV H77	2	6	9	B7	AGGRDGSC	12.000
17	HCV H77	2	51	9	A24	TYRSSAPLL	200.000
18	HCV H77	2	12	9	A24	SCLPVALGL	10.080
19	HCV H77	2	32	10	A0201	AIWVRSSIPL	24.380
20	HCV H77	2	67	10	A0201	RMASGFWKTA	23.178
21	HCV H77	2	67	9	A0201	RMASGFWKT	76.695
22	HCV H77	2	58	10	A1	LLEALPGPWR	18.000
23	HCV H77	3	2	9	A0201	QQGTFLVAL	18.930
24	HCV H77	4	2	10	B3501	SPMIALTRVL	20.000
25	HCV H77	4	19	9	B8	SCTLRGVSL	16.000
26	HCV H77	4	2	10	B7	SPMIALTRVL	240.000
27	HCV H77	4	2	9	B7	SPMIALTRV	12.000
28	HCV H77	4	26	10	A3	SLAFARVTPR	12.000
29	HCV H77	4	24	9	A0201	GVSLAFARV	11.563
30	HCV H77	5	4	10	B3501	APRLGLLVSL	60.000
31	HCV H77	5	1	10	B3501	MPAAPRLGLL	20.000
32	HCV H77	5	1	10	B8	MPAAPRLGLL	16.000
33	HCV H77	5	4	10	B8	APRLGLLVSL	16.000
34	HCV H77	5	4	10	B7	APRLGLLVSL	240.000
35	HCV H77	5	1	10	B7	MPAAPRLGLL	80.000
36	HCV H77	5	8	9	A0201	GLLVSLHQA	42.278
37	HCV H77	7	24	10	B3501	CPQRACVARY	40.000
38	HCV H77	7	28	10	B7	ACVARYIASL	12.000
39	HCV H77	7	57	10	B7	VQMIRMSSSL	12.000
40	HCV H77	7	29	9	B7	CVARYIASL	20.000
41	HCV H77	7	12	9	B7	TAGTTLQDL	12.000
42	HCV H77	7	9	9	B7	NAPTAGTTL	12.000
43	HCV H77	7	36	10	A3	SLPAPWWER	36.000
44	HCV H77	7	32	10	A24	RYIALPAPW	18.000
45	HCV H77	7	51	10	A0201	RLPTAGVQMI	23.995
46	HCV H77	7	57	10	A0201	VQMIRMSSSL	13.624
47	HCV H77	7	22	9	A0201	ALCPQRACV	69.552
48	HCV H77	7	16	9	A0201	TLQDLVALC	46.848
49	HCV H77	7	58	9	A0201	QMIRMSSSL	15.428

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50	HCV H77	8	3	9	B3501	HPWPGRTVL	20.000
51	HCV H77	8	12	9	B3501	CPSSCSSAL	20.000
52	HCV H77	10	61	10	A24	RYCLGQPTW	11.000
53	HCV H77	10	13	10	A24	RTTACEIWPL	8.000
54	HCV H77	10	2	10	A0201	CITISPLFET	13.669
55	HCV H77	10	9	9	B4403	FETGRTTAC	13.500
56	HCV H77	10	17	10	B4403	CEIWPLWNQS	20.000
57	HCV H77	10	55	10	B3501	LPVGARRYCL	20.000
58	HCV H77	10	32	10	B3501	RPSSSRGGQI	16.000
59	HCV H77	10	55	10	B8	LPVGARRYCL	16.000
60	HCV H77	10	55	10	B7	LPVGARRYCL	120.000
61	HCV H77	11	33	10	A0201	TLWAGPLLKV	1.327.748
62	HCV H77	11	32	10	A24	KTWAGPLL	12.000
63	HCV H77	11	25	10	A24	RCIPMWTKTL	14.400
64	HCV H77	11	13	10	A24	RGPSHHPRVL	12.000
65	HCV H77	11	33	9	A3	TLWAGPLLK	200.000
66	HCV H77	11	5	9	A3	GLSTTGPER	12.000
67	HCV H77	11	14	9	B7	GPSHHPRVL	80.000
68	HCV H77	11	18	9	B7	HPRVLSSRC	20.000
69	HCV H77	11	18	10	B7	HPRVLSSRCI	80.000
70	HCV H77	11	14	9	B3501	GPSHHPRVL	20.000
71	HCV H77	11	27	9	B3501	IPMWTKTLW	10.000
72	HCV H77	11	18	10	B3501	HPRVLSSRCI	24.000
73	HCV H77	12	7	9	B4403	GEVIAGVAC	18.000
74	HCV H77	12	7	10	B4403	GEVIAGVACF	360.000
75	HCV H77	13	40	10	B3501	CPRPMGLILI	24.000
76	HCV H77	13	27	10	B3501	TPLLLQRWAL	20.000
77	HCV H77	13	40	9	B3501	CPRPMGLIL	60.000
78	HCV H77	13	40	9	B8	CPRPMGLIL	16.000
79	HCV H77	13	27	10	B7	TPLLLQRWAL	120.000
80	HCV H77	13	20	10	B7	ATRCWCSTPL	120.000
81	HCV H77	13	5	10	B7	AAVRAPRSRL	81.000
82	HCV H77	13	40	10	B7	CPRPMGLILI	80.000
83	HCV H77	13	6	9	B7	AVRAPRSRL	1.350.000
84	HCV H77	13	40	9	B7	CPRPMGLIL	800.000
85	HCV H77	13	17	9	B7	QPRATRCWC	30.000
86	HCV H77	13	29	10	A0201	LLLQRWALVL	55.091
87	HCV H77	13	37	10	A0201	VLTCPRPMGL	36.316
88	HCV H77	13	30	10	A0201	LLQRWALVLT	29.137
89	HCV H77	13	29	9	A0201	LLLQRWALV	743.720
90	HCV H77	13	30	9	A0201	LLQRWALVL	14.890
91	HCV H77	13	28	9	A0201	PLLLQRWAL	13.042
92	HCV H77	14	22	9	A0201	WLCSPLLPL	226.014
93	HCV H77	14	27	9	A0201	LLPLRAPSL	36.316
94	HCV H77	14	9	9	A0201	ALSLTKQRL	21.362
95	HCV H77	14	31	9	A24	RAPSLCPIL	14.400
96	HCV H77	14	1	10	B3501	MPHPSWASAL	20.000
97	HCV H77	14	3	10	B3501	HPSWASALSL	20.000
98	HCV H77	14	36	10	B3501	CPILTSRRL	20.000
99	HCV H77	14	18	10	B3501	RGRDWLCSPL	12.000
100	HCV H77	14	46	9	B3501	CPPPERSPF	30.000
101	HCV H77	14	36	9	B3501	CPILTSRRL	20.000

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102	HCV H77	14	36	10	B7	CPILTSRRLL	120.000
103	HCV H77	14	1	10	B7	MPHPSWASAL	80.000
104	HCV H77	14	3	10	B7	HPSWASALS	80.000
105	HCV H77	14	14	10	B7	KQRLRGRDWL	60.000
106	HCV H77	14	18	10	B7	RGRDWLCSPL	40.000
107	HCV H77	14	8	10	B7	SALSLTKQRL	12.000
108	HCV H77	14	36	9	B7	CPILTSRRLL	80.000
109	HCV H77	14	31	9	B7	RAPSLCPIL	12.000
110	HCV H77	14	9	9	B7	ALSLTKQRL	12.000
111	HCV H77	14	34	9	A3	SLCPILTSR	13.500
112	HCV H77	14	18	10	A24	RGRDWLCSPL	11.520
113	HCV H77	15	3	10	B7	WPTTAVLTCL	80.000
114	HCV H77	15	17	10	B7	AAMLSSCRPM	27.000
115	HCV H77	15	18	10	B7	AMLSSCRPML	18.000
116	HCV H77	15	1	9	B3501	MPWPTTAVL	20.000
117	HCV H77	15	3	10	B3501	WPTTAVLTCL	20.000
118	HCV H77	15	1	9	B7	MPWPTTAVL	80.000
119	HCV H77	15	18	10	A0201	AMLSSCRPML	57.085
120	HCV H77	15	11	10	A0201	CLSSRPAAML	21.362
121	HCV H77	15	19	9	A0201	MLSSCRPML	36.316
122	HCV H77	16	3	10	B3501	SPGLNAGAGL	20.000
123	HCV H77	16	52	9	B3501	RPPRLQLGY	80.000
124	HCV H77	16	3	10	B7	SPGLNAGAGL	80.000
125	HCV H77	16	38	10	B7	SVSAMTRAVL	30.000
126	HCV H77	16	47	10	B7	LGMSSRPRL	12.000
127	HCV H77	16	13	10	B7	AGGSQASIDL	12.000
128	HCV H77	16	33	10	B7	STRPSSVSAM	10.000
129	HCV H77	16	50	9	B7	SSRPRLQL	90.000
130	HCV H77	16	11	10	A0201	GLAGGSQASI	10.433
131	HCV H77	16	48	9	A0201	GMSSRPRL	15.428
132	HCV H77	17	8	9	B3501	QSRVGRFTL	15.000
133	HCV H77	17	5	10	B7	YPRQSRVGR	20.000
134	HCV H77	17	8	9	B7	QSRVGRFTL	60.000
135	HCV H77	17	7	10	A0201	RQSRVGRFTL	11.913
136	HCV H77	18	4	10	B3501	HPCYTDWALF	30.000
137	HCV H77	18	4	9	B3501	HPCYTDWAL	20.000
138	HCV H77	18	4	9	B7	HPCYTDWAL	80.000
139	HCV H77	18	6	10	A24	CYTDWALFRM	30.000
140	HCV H77	18	7	10	A1	YTDWALFRMK	25.000
141	HCV H77	19	6	10	A3	ALSTYRTSSK	20.000
142	HCV H77	20	39	9	A24	RCLVTPPLL	12.000
143	HCV H77	20	37	10	B7	CQRCLVTPPL	40.000
144	HCV H77	20	10	10	B3501	RPTGRNSRSF	40.000
145	HCV H77	21	2	9	B7	MARAWRELL	180.000
146	HCV H77	21	2	9	B8	MARAWRELL	16.000
147	HCV H77	22	11	10	A1	AMQPPASLPY	12.500
148	HCV H77	22	17	9	A1	SLPYSAASL	21.362
149	HCV H77	22	10	9	A24	RAMQPPASL	12.000
150	HCV H77	22	11	10	A3	AMQPPASLPY	12.000
151	HCV H77	22	10	9	B7	RAMQPPASL	54.000
152	HCV H77	22	3	10	B7	PPRTTCRRAM	30.000
153	HCV H77	22	16	10	B7	ASLPYSAASL	12.000

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154	HCV H77	22	3	10	B3501	PPRTTCRRAM	12.000
155	HCV H77	24	6	10	A24	PYLQKFCGSL	30.000
156	HCV H77	24	7	9	A0201	YLQKFCGSL	48.544
157	HCV H77	25	96	10	B3501	RSVVGPTTRKM	20.000
158	HCV H77	25	27	10	B3501	QPYLLFWPSL	20.000
159	HCV H77	25	75	10	B3501	LPCPPWRGSL	20.000
160	HCV H77	25	24	10	B3501	SPNQPYLLPW	10.000
161	HCV H77	25	33	9	B3501	WPSLPPKVL	20.000
162	HCV H77	25	72	9	B3501	SPILPCPPW	10.000
163	HCV H77	25	2	10	B8	AARYHLHGPL	16.000
164	HCV H77	25	2	10	B7	AARYHLHGPL	360.000
165	HCV H77	25	75	10	B7	LPCPPWRGSL	120.000
166	HCV H77	25	27	10	B7	QPYLLFWPSL	120.000
167	HCV H77	25	65	10	B7	APPTPTLSPI	24.000
168	HCV H77	25	33	9	B7	WPSLPPKVL	120.000
169	HCV H77	25	63	9	B7	LAAPPTPTL	18.000
170	HCV H77	25	116	9	B7	QAHSSPRAL	12.000
171	HCV H77	25	41	9	B7	LAAPQLPAL	12.000
172	HCV H77	25	50	9	B7	RATIRQHPL	12.000
173	HCV H77	25	30	10	A3	LLPWPSLPPK	30.000
174	HCV H77	25	4	10	A24	RYHLHGPELLC	10.000
175	HCV H77	25	4	9	A24	RYHLHGPELL	400.000
176	HCV H77	25	28	9	A24	PYLLFWPSL	30.000
177	HCV H77	25	54	9	A24	RQHPLSPPL	11.520
178	HCV H77	25	11	10	A0201	LLCLRLGKSV	118.238
179	HCV H77	25	40	10	A0201	VLAAPQLPAL	83.527
180	HCV H77	25	62	10	A0201	LLAAPPTPTL	36.316
181	HCV H77	25	104	10	A0201	KMSCAAQCLI	26.372
182	HCV H77	25	104	9	A0201	KMSCAAQCL	53.999
183	HCV H77	25	83	9	A0201	SLGIRISAT	17.140
184	HCV H77	25	62	9	A0201	LLAAPPTPT	12.668
185	HCV H77	25	35	9	A0201	SLPPKVLAA	11.426
186	HCV H77	25	45	9	A0201	QLPALRATI	10.433
187	HCV H77	25	118	9	A1	HSSEPRALRK	15.000
188	HCV H77	27	57	10	B4403	ATAGAARAAY	27.000
189	HCV H77	27	30	10	B3501	KPAWPSSLSL	40.000
190	HCV H77	27	33	10	B3501	WPSSPSLRGF	20.000
191	HCV H77	27	36	9	B3501	SPSLRGFML	20.000
192	HCV H77	27	35	9	B3501	SSPSLRGFM	10.000
193	HCV H77	27	36	9	B8	SPSLRGFML	16.000
194	HCV H77	27	2	10	B7	IPAVLTPQSL	80.000
195	HCV H77	27	30	10	B7	KPAWPSSLSL	80.000
196	HCV H77	27	38	10	B7	SLRGFMLGAL	40.000
197	HCV H77	27	15	10	B7	SVRRRQFTNV	10.000
198	HCV H77	27	36	9	B7	SPSLRGFML	80.000
199	HCV H77	27	46	9	A3	ALLPIQGGK	20.000
200	HCV H77	27	19	10	A0201	RQFTNVVTWT	35.364
201	HCV H77	27	42	9	A0201	FMLGALLPI	294.957
202	HCV H77	28	48	9	B4403	EEAGLPYVA	12.000
203	HCV H77	28	31	10	B4403	CELGDTGPGA	12.000
204	HCV H77	28	48	10	B4403	EEAGLPYVAS	12.000
205	HCV H77	28	46	9	B3501	CPEEAGLPY	24.000

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206	HCV H77	28	37	9	B3501	GPGASALGF	20.000
207	HCV H77	28	3	10	B7	SAHFHSTVTL	12.000
208	HCV H77	28	44	9	A24	GFCPEEAGL	24.000
209	HCV H77	28	25	9	A0201	NLGSRPCEL	21.362
210	HCV H77	28	46	9	A1	CPEEAGLPY	56.250
211	HCV H77	29	3	9	B4403	GPAGSGFAY	13.500
212	HCV H77	29	3	9	B3501	GPAGSGFAY	40.000
213	HCV H77	29	1	9	B3501	MPGPAGSGF	20.000
214	HCV H77	33	47	10	B4403	GELGEGPGSA	12.000
215	HCV H77	33	50	10	B4403	GEGPGSAAAI	12.000
216	HCV H77	33	5	9	B4403	DELVPYGSV	24.000
217	HCV H77	33	47	9	B4403	GELGEGPGS	12.000
218	HCV H77	33	92	10	B3501	HPTDQHQRQL	40.000
219	HCV H77	33	74	9	B3501	RPHHGWACW	20.000
220	HCV H77	33	36	9	B3501	SPGGHSVFL	20.000
221	HCV H77	33	92	10	B7	HPTDQHQRQL	80.000
222	HCV H77	33	36	9	B7	SPGGHSVFL	80.000
223	HCV H77	33	41	9	B7	SVFLHGCEL	20.000
224	HCV H77	33	33	10	A0201	SLGSPGGHSV	69.552
225	HCV H77	34	37	10	B3501	SSRFPLIDTL	15.000
226	HCV H77	34	40	9	B3501	FPLIDTLYL	30.000
227	HCV H77	34	34	10	B8	LARSSRFPLI	80.000
228	HCV H77	34	26	9	B8	QCGPRPCGL	16.000
229	HCV H77	34	34	9	B8	LARSSRFPL	16.000
230	HCV H77	34	37	10	B7	SSRFPLIDTL	40.000
231	HCV H77	34	34	10	B7	LARSSRFPLI	12.000
232	HCV H77	34	34	9	B7	LARSSRFPL	180.000
233	HCV H77	34	40	9	B7	FPLIDTLYL	80.000
234	HCV H77	34	39	10	A24	RFPLIDTLYL	60.000
235	HCV H77	34	46	9	A24	LYLRLGGL	360.000
236	HCV H77	34	33	10	A0201	GLARSSRFPL	193.902
237	HCV H77	34	45	10	A0201	TLYLRLGGL	20.440
238	HCV H77	34	40	9	A0201	FPLIDTLYL	13.054
239	HCV H77	35	14	9	B8	GARWRRPGC	16.000
240	HCV H77	35	23	10	B7	SGRVLPVNRL	60.000
241	HCV H77	35	5	9	B7	RPGRHEHL	80.000
242	HCV H77	35	19	9	B7	RPCCSGRVL	80.000
243	HCV H77	35	40	10	A0201	RLVREAGNYT	40.986
244	HCV H77	36	47	9	B4403	ASVDKLGVI	27.000
245	HCV H77	36	2	9	B4403	DEPANSLRL	12.000
246	HCV H77	36	62	10	B3501	LAKGHLGLDM	18.000
247	HCV H77	36	47	9	B3501	ASVDKLGVI	20.000
248	HCV H77	36	58	10	B7	MLRFLAKGHL	40.000
249	HCV H77	36	53	10	B7	GVYHSMRFL	20.000
250	HCV H77	36	44	9	B7	EATASVDKL	12.000
251	HCV H77	36	51	10	A3	KLGVYHSMR	24.000
252	HCV H77	36	68	9	A3	GLDMRGAER	12.000
253	HCV H77	36	60	10	A24	RFLAKGHLGL	60.000
254	HCV H77	36	54	9	A24	VYHSMRFL	200.000
255	HCV H77	36	53	10	A0201	GVYHSMRFL	15.133
256	HCV H77	36	61	9	A0201	FLAKGHLGL	98.267
257	HCV H77	36	51	9	A0201	KLGVYHSMR	74.768

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258	HCV H77	36	68	9	A1	GLDMRGAER	10.000
259	HCV H77	36	5	9	B3501	RPGGRHEHL	40.000
260	HCV H77	36	19	9	B3501	RPGCSGRVL	40.000
261	HCV H77	37	40	10	B3501	TPRVPGGVAI	24.000
262	HCV H77	37	18	9	B3501	APTQVCAPL	20.000
263	HCV H77	37	43	9	B3501	VPGGVAITL	20.000
264	HCV H77	37	40	10	B7	TPRVPGGVAI	80.000
265	HCV H77	37	42	10	B7	RVPGGVAITL	20.000
266	HCV H77	37	1	10	B7	MPVPDPIARI	12.000
267	HCV H77	37	17	10	B7	GAPTQVCAPL	12.000
268	HCV H77	37	18	9	B7	APTQVCAPL	240.000
269	HCV H77	37	43	9	B7	VPGGVAITL	80.000
270	HCV H77	37	21	9	B7	QVCAPLQAL	30.000
271	HCV H77	37	40	9	B7	TPRVPGGVA	30.000
272	HCV H77	37	42	10	A24	RVPGGVAITL	16.800
273	HCV H77	37	35	9	A0201	IIQSRTPRV	16.258
274	HCV H77	37	3	9	A1	VPDPIARIF	12.500
275	HCV H77	38	8	10	B7	RPRRRWKEGL	800.000
276	HCV H77	38	8	10	B3501	RPRRRWKEGL	120.000
277	HCV H77	39	1	10	B3501	MPQKTWGPAL	20.000
278	HCV H77	39	12	9	A1	SLETPGPER	18.000
279	HCV H77	39	4	10	A0201	KTWGPALASL	19.824
280	HCV H77	39	1	10	B7	MPQKTWGPAL	80.000
281	HCV H77	40	47	9	B3501	CPAPLVLVL	20.000
282	HCV H77	40	57	10	B3501	TPARCRGRHL	20.000
283	HCV H77	40	57	10	B8	TPARCRGRHL	16.000
284	HCV H77	40	58	9	B8	PARCRGRHL	32.000
285	HCV H77	40	57	10	B7	TPARCRGRHL	80.000
286	HCV H77	40	42	10	B7	SQRVSCPAPL	40.000
287	HCV H77	40	44	10	B7	RVSCPAPLVL	20.000
288	HCV H77	40	27	9	B7	LVRLVHGWL	200.000
289	HCV H77	40	47	9	B7	CPAPLVLVL	80.000
290	HCV H77	40	58	9	B7	PARCRGRHL	12.000
291	HCV H77	40	65	9	A3	HLPPPQPMK	45.000
292	HCV H77	40	29	9	A3	RLVHGWLQR	12.000
293	HCV H77	40	22	9	A24	RWPAGLVRL	12.000
294	HCV H77	40	26	10	A0201	GLVRLVHGWL	15.274

Table 4n  
H77 (4-6)

No	Strain	ORF	HLA	Start	Sequence	Score
1	HCV H77	1	B4403	4	REASISTLC	12
2	HCV H77	1	B4403	4	REASISTLCS	12
3	HCV H77	1	B7	2	ICREASISTL	40
4	HCV H77	1	B8	2	ICREASISTL	24
5	HCV H77	2	B7	16	CVGAPRPIL	45
6	HCV H77	2	B8	6	AARACKGAQT	16
7	HCV H77	3	B7	11	DAVASGAGL	12
8	HCV H77	4	A68.1	22	PVQRCRWRR	20
9	HCV H77	4	A68.1	21	SPVQRCRWRR	10

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10	HCV H77	4	A68.1	30	RQLGQHPQR	10
11	HCV H77	4	A68.1	21	SFVQRCRWRR	10
12	HCV H77	4	B3501	5	LPFRPRHTL	20
13	HCV H77	4	B3501	8	RPRHTLQEC	12
14	HCV H77	4	B3501	19	GPSPVQRCRW	10
15	HCV H77	4	B4403	3	QELFPRPRHT	16
16	HCV H77	4	B7	5	LPFRPRHTL	180
17	HCV H77	4	B7	8	RPRHTLQEC	20
18	HCV H77	4	B7	23	VQRCRWRRQL	60
19	HCV H77	5	A0201	10	ALTGPPSIV	28,52
20	HCV H77	5	A0201	2	KQWRGYQAA	21,95
21	HCV H77	5	A0201	2	KQWRGYQAAL	62,92
22	HCV H77	6	A68.1	10	RTSSLSGRR	50
23	HCV H77	6	A68.1	2	RPASRRARR	10
24	HCV H77	7	A0201	11	KLLCHKHLL	276,64
25	HCV H77	7	A0201	12	LLCHKHLLST	29,14
26	HCV H77	7	A0201	18	LLSTRRRQGT	12,67
27	HCV H77	7	A24	11	KLLCHKHLL	12
28	HCV H77	7	A68.1	20	STRRRQGTCT	50
29	HCV H77	7	A68.1	7	GTRHKLLCHK	45
30	HCV H77	7	B3501	3	HPWSGTRHKL	20
31	HCV H77	7	B7	3	HPWSGTRHKL	120
32	HCV H77	8	B3501	10	SPQGLGPHW	10
33	HCV H77	8	B3501	10	SPQGLGPHWY	40
34	HCV H77	9	A68.1	3	WSSFRPRGR	15
35	HCV H77	9	B3501	7	RPRGRQSSI	48
36	HCV H77	9	B7	7	RPRGRQSSI	80
37	HCV H77	9	B8	7	RPRGRQSSI	40
38	HCV H77	10	A1	2	ATESAPLTR	112,5
39	HCV H77	10	A68.1	57	DTTQSRRTTR	150
40	HCV H77	10	A68.1	2	ATESAPLTR	50
41	HCV H77	10	A68.1	63	RTRGRTQDR	50
42	HCV H77	10	A68.1	39	EATSRRGRR	15
43	HCV H77	10	A68.1	6	APLTRQEQR	10
44	HCV H77	10	A68.1	35	GAGGEATSR	10
45	HCV H77	10	A68.1	17	TTRPPPCPVR	75
46	HCV H77	10	A68.1	58	TTQSRRTTRGR	50
47	HCV H77	10	A68.1	6	APLTRQEQR	15
48	HCV H77	10	A68.1	41	TSRRGRRPLR	15
49	HCV H77	10	A68.1	35	GAGGEATSRR	10
50	HCV H77	10	B3501	19	RPPPCPVRM	80
51	HCV H77	10	B3501	41	TSRRGRRPL	15
52	HCV H77	10	B7	41	TSRRGRRPL	60
53	HCV H77	10	B7	19	RPPPCPVRM	20
54	HCV H77	10	B7	40	ATSRRGRRPL	18
55	HCV H77	11	A68.1	8	GSNQWGRAR	15
56	HCV H77	11	A68.1	6	VCGSNQWGR	10
57	HCV H77	11	A68.1	5	DVCGSNQWGR	600
58	HCV H77	11	B3501	14	RARCCCPPL	18
59	HCV H77	11	B7	14	RARCCCPPL	120
60	HCV H77	13	A0201	2	ALPGGGVLEA	11,43
61	HCV H77	13	A1	8	VLEAARHSY	45
62	HCV H77	13	B7	1	MALPGGGVL	12
63	HCV H77	14	A68.1	8	RSRQNNQQR	15

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64	HCV H77	15	A24	29	SFLRHAATL	30
65	HCV H77	15	A24	29	SFLRHAATLL	30
66	HCV H77	15	A68.1	1	MAALPPLDR	10
67	HCV H77	15	A68.1	10	SLARTLRAR	10
68	HCV H77	15	A68.1	9	RSLARTLRAR	30
69	HCV H77	15	B7	30	FLRHAATLL	40
70	HCV H77	15	B7	3	ALPPLDRSL	12
71	HCV H77	15	B7	11	LARTLRARCL	120
72	HCV H77	15	B7	2	AALPPLDRSL	36
73	HCV H77	15	B8	11	LARTLRARCL	320
74	HCV H77	17	A0201	33	CLAVSHAAL	21,36
75	HCV H77	17	A0201	21	MIMLPSQEL	18,48
76	HCV H77	17	A0201	22	IMLPSQELT	16,59
77	HCV H77	17	A0201	23	MLPSQELTGV	271,95
78	HCV H77	17	A0201	8	VISIILAHSV	16,26
79	HCV H77	17	A0201	20	NMIMLPSQEL	15,43
80	HCV H77	17	A3	3	TLKKWVISI	10,8
81	HCV H77	17	A68.1	35	AVSHAALAR	200
82	HCV H77	17	A68.1	34	LAVSHAALAR	10
83	HCV H77	17	A68.1	40	ALARGVVGSR	10
84	HCV H77	17	B3501	15	HSVGANMIM	10
85	HCV H77	17	B4403	27	QELTGVCLA	24
86	HCV H77	17	B4403	27	QELTGVCLAV	12
87	HCV H77	17	B7	16	SVGANMIML	20
88	HCV H77	17	B7	21	MIMLPSQEL	18
89	HCV H77	18	A68.1	6	SPAARQAAR	10
90	HCV H77	18	A68.1	1	MVQSWSPAAR	200
91	HCV H77	18	A68.1	5	WSPAARQAAR	15
92	HCV H77	18	B3501	8	AARQAARALM	18
93	HCV H77	18	B7	8	AARQAARAL	360
94	HCV H77	18	B7	8	AARQAARALM	135
95	HCV H77	18	B8	8	AARQAARAL	16
96	HCV H77	20	A0201	15	YENPIGVFL	10,51
97	HCV H77	20	A0201	13	VSYENPIGV	10,13
98	HCV H77	20	A1	6	TVESKQRVSY	90
99	HCV H77	20	A24	14	SYENPIGVF	150
100	HCV H77	20	A24	14	SYENPIGVFL	420
101	HCV H77	20	A3	2	LSVTVESK	60
102	HCV H77	20	A68.1	4	SVTVESKQR	200
103	HCV H77	20	A68.1	3	LSVTVESKQR	30
104	HCV H77	20	A68.1	1	MSLSVTVESK	18
105	HCV H77	20	B3501	17	NPIGVFLDF	20
106	HCV H77	20	B3501	31	NSTRCPGEY	10
107	HCV H77	20	B3501	13	VSYENPIGVF	10
108	HCV H77	20	B4403	7	VESKQRVSY	120
109	HCV H77	20	B4403	17	NPIGVFLDF	11,25
110	HCV H77	22	A0201	20	LMWATAFLA	293,63
111	HCV H77	22	A0201	19	ELMWATAFL	32,6
112	HCV H77	22	A0201	26	FLAWQRTSFA	125,69
113	HCV H77	22	A0201	9	TLSSRRSFHT	43,22
114	HCV H77	22	A0201	1	MMVVSIGVTL	26,23
115	HCV H77	22	A1	17	HTELMWATAF	22,5
116	HCV H77	22	A24	25	AFLAWQRTSF	15
117	HCV H77	22	A68.1	23	ATAFLAWQR	100



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118	HCV H77	22	A68.1	5	SIGVTLSSR	10
119	HCV H77	22	A68.1	4	VSIGVTLSSR	30
120	HCV H77	22	A68.1	5	SIGVTLSSRR	10
121	HCV H77	22	B3501	11	SSRRSFHTEL	15
122	HCV H77	22	B4403	18	TELMWATAF	180
123	HCV H77	22	B4403	18	TELMWATAFL	18
124	HCV H77	22	B7	2	MVVSIGVTL	20
125	HCV H77	22	B7	19	ELMWATAFL	12
126	HCV H77	22	B7	11	SSRRSFHTEL	40
127	HCV H77	24	A0201	17	KAVD RVDSV	15,62
128	HCV H77	24	A0201	11	LVASSAKAV	10,35
129	HCV H77	24	A0201	10	LLVASSAKAV	118,24
130	HCV H77	24	A0201	9	KLLVASSAKA	64,34
131	HCV H77	24	A1	1	MPEVEELPK	22,5
132	HCV H77	24	A3	9	KLLVASSAK	90
133	HCV H77	24	A68.1	18	AVDRVDSVR	300
134	HCV H77	24	A68.1	13	ASSAKAVDR	15
135	HCV H77	24	A68.1	3	EVEELPKLL	12
136	HCV H77	24	A68.1	21	RVDSVRTTVR	200
137	HCV H77	24	A68.1	24	SVRTTVRFFR	200
138	HCV H77	24	A68.1	17	KAVD RVDSVR	15
139	HCV H77	24	A68.1	3	EVEELPKLLV	12
140	HCV H77	24	B4403	5	EELPKLLVA	36
141	HCV H77	24	B4403	5	EELPKLLVAS	24
142	HCV H77	24	B4403	23	DSVRTTVRFF	18
143	HCV H77	24	B7	1	MPEVEELPKL	24
144	HCV H77	25	A0201	52	NLLPAASAV	257,34
145	HCV H77	25	A0201	60	VIWEGSVSM	39,52
146	HCV H77	25	A0201	125	GIWHGHLRL	24,38
147	HCV H77	25	A0201	132	RLSVVIPDT	17,14
148	HCV H77	25	A0201	7	CLHRR LASM	11,43
149	HCV H77	25	A0201	29	ALRDGADSWL	36,61
150	HCV H77	25	A0201	52	NLLPAASAVI	15,83
151	HCV H77	25	A1	82	NCDPTGYSW	10
152	HCV H77	25	A24	102	KGLQGGANL	12
153	HCV H77	25	A3	23	WLAVQVALR	12
154	HCV H77	25	A3	103	GLQGGANLCR	36
155	HCV H77	25	A3	1	MLPPI SCLHR	12
156	HCV H77	25	A68.1	23	WLAVQVALR	10
157	HCV H77	25	A68.1	92	PTLNDTSSR	10
158	HCV H77	25	A68.1	104	LQGGANLCR	10
159	HCV H77	25	A68.1	1	MLPPI SCLHR	11,25
160	HCV H77	25	A68.1	104	LQGGANLCRR	10
161	HCV H77	25	B3501	54	LPAASAVIW	10
162	HCV H77	25	B4403	20	GESWLAVQVA	18
163	HCV H77	25	B7	42	LAIEGGDPL	12
164	HCV H77	25	B7	29	ALRDGADSWL	120
165	HCV H77	25	B7	59	AVIWEGSVSM	15
166	HCV H77	25	B8	29	ALRDGADSWL	12
167	HCV H77	26	A0201	12	VLGPTILIV	111,5
168	HCV H77	26	A0201	62	GMSLAFSQV	95,44
169	HCV H77	26	A0201	22	FLTCPVISA	52,56
170	HCV H77	26	A0201	9	FLQVLGPTI	47,99
171	HCV H77	26	A0201	16	TILIVPFLT	21,99

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172	HCV H77	26	A0201	17	ILIVPFLTC	16,05
173	HCV H77	26	A0201	19	IVPFLTCPV	10,35
174	HCV H77	26	A0201	84	SLSQEPHGV	69,55
175	HCV H77	26	A0201	9	FLQVLGPTIL	40,29
176	HCV H77	26	A0201	27	VISAPQWQRV	27,64
177	HCV H77	26	A0201	38	IMPSPRQTPL	26,23
178	HCV H77	26	A0201	62	GMSLAFSQVL	24,04
179	HCV H77	26	A0201	11	QVLGPTILIV	21,23
180	HCV H77	26	A0201	18	LIVPFLTCPV	16,26
181	HCV H77	26	A0201	3	NVPLHMFLOV	11,56
182	HCV H77	26	A24	66	AFSQVLKSL	28
183	HCV H77	26	A3	64	SLAFSQVLK	20
184	HCV H77	26	A3	46	PLYPRWQDTK	45
185	HCV H77	26	A68.1	35	RVCIMPSPR	200
186	HCV H77	26	A68.1	92	GVVHSELIH	12
187	HCV H77	26	A68.1	26	PVISAPQWQR	40
188	HCV H77	26	A68.1	63	MSLAFSQVLK	18
189	HCV H77	26	B3501	14	GPTILIVPF	20
190	HCV H77	26	B3501	39	MPSPRQTPL	20
191	HCV H77	26	B3501	57	IPGSCGMSL	20
192	HCV H77	26	B3501	25	CPVISAPQW	10
193	HCV H77	26	B3501	30	APQWQRVCI	40
194	HCV H77	26	B3501	39	MPSPRQTPLY	40
195	HCV H77	26	B3501	48	YPRWQDTKGI	36
196	HCV H77	26	B3501	4	VPLHMFLOVL	20
197	HCV H77	26	B3501	14	GPTILIVPFL	20
198	HCV H77	26	B3501	74	LSTSHIQSQM	10
199	HCV H77	26	B4403	87	QEPEHGVVHS	12
200	HCV H77	26	B7	39	MPSPRQTPL	80
201	HCV H77	26	B7	57	IPGSCGMSL	80
202	HCV H77	26	B7	30	APQWQRVCI	36
203	HCV H77	26	B7	4	VPLHMFLOVL	80
204	HCV H77	26	B7	14	GPTILIVPFL	80
205	HCV H77	26	B7	48	YPRWQDTKGI	80
206	HCV H77	26	B7	30	APQWQRVCI	60
207	HCV H77	26	B7	65	LAFSQVLKSL	12
208	HCV H77	26	B8	39	MPSPRQTPL	16
209	HCV H77	27	B7	2	AVTRAAASL	60
210	HCV H77	27	B7	1	MAVTRAAASL	12
211	HCV H77	28	A0201	76	MLKRRVWPV	71,39
212	HCV H77	28	A0201	80	RVWPVVSGL	35,68
213	HCV H77	28	A0201	95	AINEAMAGL	27,7
214	HCV H77	28	A0201	132	CQLVWTAGV	26,09
215	HCV H77	28	A0201	127	KTSSFCQLV	12,85
216	HCV H77	28	A0201	75	NMLKRRVWPV	3206,06
217	HCV H77	28	A0201	87	GLVTAAVKAI	24
218	HCV H77	28	A0201	19	ILNATRAPAT	12,67
219	HCV H77	28	A0201	84	VVSGLVTAAY	10,35
220	HCV H77	28	A1	70	ATHPPNMLK	25
221	HCV H77	28	A1	70	ATHPPNMLKR	12,5
222	HCV H77	28	A24	112	KYCIPLMKF	220
223	HCV H77	28	A24	80	RVWPVVSGL	13,44
224	HCV H77	28	A24	123	CFAQKTSSF	10
225	HCV H77	28	A24	94	KAINAMAGL	12

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226	HCV H77	28	A3	163	SIIPCSMYGK	20,25
227	HCV H77	28	A68.1	27	ATPAPYPAR	50
228	HCV H77	28	A68.1	70	ATHPPNMLK	45
229	HCV H77	28	A68.1	70	ATHPPNMLKR	75
230	HCV H77	28	A68.1	142	TSAWRDAVCR	30
231	HCV H77	28	A68.1	85	VSGLVTAAVK	18
232	HCV H77	28	A68.1	44	PTLPMAAPAR	15
233	HCV H77	28	A68.1	15	SPLMILNATR	10
234	HCV H77	28	A68.1	100	MAGLPGSVDR	10
235	HCV H77	28	A68.1	137	TAGVITSAWR	10
236	HCV H77	28	B3501	28	TPAPYPARM	40
237	HCV H77	28	B3501	109	RPAKYCIPL	40
238	HCV H77	28	B3501	105	GSVDRPAKY	20
239	HCV H77	28	B3501	24	RAPATPAPY	12
240	HCV H77	28	B3501	152	RPRAFCLNC	12
241	HCV H77	28	B3501	9	SSVEGTSPL	10
242	HCV H77	28	B3501	162	ASIIPCSMY	10
243	HCV H77	28	B3501	109	RPAKYCIPLM	80
244	HCV H77	28	B3501	115	IPLMKFHMCF	20
245	HCV H77	28	B3501	9	SSVEGTSPLM	20
246	HCV H77	28	B3501	32	YPARMSTRTF	20
247	HCV H77	28	B3501	152	RPRAFCLNCS	12
248	HCV H77	28	B3501	8	RSSVEGTSPL	10
249	HCV H77	28	B3501	160	CSASIIPCSM	10
250	HCV H77	28	B4403	162	ASIIPCSMY	45
251	HCV H77	28	B4403	97	NEAMAGLPGS	12
252	HCV H77	28	B7	109	RPAKYCIPL	80
253	HCV H77	28	B7	69	AATHPPNML	54
254	HCV H77	28	B7	28	TPAPYPARM	20
255	HCV H77	28	B7	80	RVWVVSGL	20
256	HCV H77	28	B7	152	RPRAFCLNC	20
257	HCV H77	28	B7	92	AVKAINAM	15
258	HCV H77	28	B7	95	AINAMAGL	12
259	HCV H77	28	B7	37	STRTFPSPTL	60
260	HCV H77	28	B7	149	VCRRPRAFCL	40
261	HCV H77	28	B7	109	RPAKYCIPLM	20
262	HCV H77	28	B7	68	WAATHPPNML	18
263	HCV H77	28	B7	94	KAINAMAGL	12
264	HCV H77	28	B7	125	AQKTSSFCQL	12
265	HCV H77	28	B8	76	MLKRRVWPV	24
266	HCV H77	28	B8	149	VCRRPRAFCL	320
267	HCV H77	29	A0201	39	YLVIGCVRV	319,94
268	HCV H77	29	A0201	37	MMYLVIGCV	81,71
269	HCV H77	29	A0201	36	VMMYLVIGC	51,91
270	HCV H77	29	A0201	36	VMMYLVIGCV	94,47
271	HCV H77	29	A1	31	SADMHVMMY	125
272	HCV H77	29	A1	2	TTQFVDRQY	12,5
273	HCV H77	29	A24	16	RTPPTSTQVL	17,28
274	HCV H77	29	A3	37	MMYLVIGCVR	30
275	HCV H77	29	A68.1	5	PVDRQYAAR	20
276	HCV H77	29	A68.1	22	TQVLVTTSR	10
277	HCV H77	29	A68.1	21	STQVLVTTSR	50
278	HCV H77	29	A68.1	4	QPVDRQYAAR	10
279	HCV H77	29	B3501	30	RSADMHVMM	40

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280	HCV H77	29	B3501	17	TPPTSTQVL	20
281	HCV H77	29	B3501	28	TSRSADMHVM	45
282	HCV H77	29	B3501	30	RSADMHVMMY	40
283	HCV H77	29	B4403	31	SADMHVMMY	18
284	HCV H77	29	B4403	30	RSADMHVMMY	18
285	HCV H77	29	B7	17	TPPTSTQVL	80
286	HCV H77	29	B7	14	AARTPPTST	13,5
287	HCV H77	29	B7	28	TSRSADMHVM	10
288	HCV H77	29	B8	11	AARAARTPPT	16
289	HCV H77	30	A0201	5	SLTVVSAGV	69,55
290	HCV H77	31	B7	3	EGRSPGATNL	40
291	HCV H77	32	A68.1	4	FPLPVLPRR	15
292	HCV H77	32	B3501	1	MPGFPLPVL	20
293	HCV H77	32	B7	1	MPGFPLPVL	120
294	HCV H77	33	A0201	3	KVGSRLKSTV	21,3
295	HCV H77	33	A68.1	1	MVKVGSRLK	120
296	HCV H77	34	A68.1	13	LVGMTDTSR	600
297	HCV H77	35	A24	6	SFAASSSHF	10
298	HCV H77	35	A24	15	FFEWQKMRCL	30
299	HCV H77	35	A24	6	SFAASSSHFF	10
300	HCV H77	35	A68.1	22	RCLPPLITSR	15
301	HCV H77	35	A68.1	11	SSHFFFEWQK	13,5
302	HCV H77	36	A0201	6	TVTEPGGVAV	24,95
303	HCV H77	36	A1	7	VTEPGGVAV	45
304	HCV H77	36	A1	7	VTEPGGVAVA	45
305	HCV H77	36	A68.1	22	APAVSAWSR	10
306	HCV H77	36	B3501	34	MPKMDVASV	18
307	HCV H77	36	B3501	28	WSRTVPMPKM	30
308	HCV H77	36	B3501	25	VSAWSRTVPM	10
309	HCV H77	36	B4403	8	TEPGGVAVA	18
310	HCV H77	36	B4403	8	TEPGGVAVAS	13,5
311	HCV H77	36	B7	13	VAVASTTSL	12
312	HCV H77	36	B7	12	GVAVASTTSL	20
313	HCV H77	36	B7	28	WSRTVPMPKM	15
314	HCV H77	37	A0201	14	ILGSTPWAL	272,37
315	HCV H77	37	A0201	13	LILGSTPWA	23,63
316	HCV H77	37	A0201	2	GLPVVIVLT	17,14
317	HCV H77	37	A0201	7	IVLTPVLIL	11,09
318	HCV H77	37	A0201	13	LILGSTPWAL	138,57
319	HCV H77	37	A0201	12	VLILGSTPWA	46,45
320	HCV H77	37	A24	1	MGLPVVIVL	10,08
321	HCV H77	37	B3501	16	GSTPWALDM	10
322	HCV H77	37	B7	7	IVLTPVLIL	30
323	HCV H77	37	B7	5	VVIVLTFVL	20
324	HCV H77	38	A0201	14	ALATPRVHTA	11,43
325	HCV H77	38	A68.1	19	RVHTAALNR	200
326	HCV H77	38	A68.1	11	KSTALATPR	15
327	HCV H77	28	A68.1	2	VVPRFSTGIK	120
328	HCV H77	38	A68.1	36	NSGPPPEEPFK	40,5
329	HCV H77	38	A68.1	1	MVVPRFSTGI	12
330	HCV H77	38	B3501	17	TPRVHTAAL	60
331	HCV H77	38	B7	17	TPRVHTAAL	800
332	HCV H77	38	B7	16	ATPRVHTAAL	12
333	HCV H77	38	B8	17	TPRVHTAAL	16

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334	HCV H77	39	A24	3	RGESRLPLL	12
335	HCV H77	39	A3	18	GMTSACLVTR	18
336	HCV H77	39	A68.1	19	MTSACLVTR	50
337	HCV H77	39	A68.1	8	LPLLSPRRR	10
338	HCV H77	39	A68.1	5	ESRLPLLSPR	45
339	HCV H77	39	B3501	11	LSPRRRTGM	10
340	HCV H77	39	B7	12	SPRRRTGMT	20
341	HCV H77	39	B7	1	MGRGESRLPL	60
342	HCV H77	39	B8	12	SPRRRTGMT	16
343	HCV H77	40	A0201	4	PLGDAMVLV	14,43
344	HCV H77	40	B3501	3	GPLGDAMVL	30
345	HCV H77	40	B7	3	GPLGDAMVL	80
346	HCV H77	41	A0201	77	LMMSPHAHV	315,96
347	HCV H77	41	A0201	22	FLSRPVRLV	147,17
348	HCV H77	41	A0201	15	WTSPSTWFL	56,3
349	HCV H77	41	A0201	6	KVWVAVDTI	29,89
350	HCV H77	41	A0201	8	WVAVDTIWT	16,5
351	HCV H77	41	A0201	31	IIHPRRPLV	16,26
352	HCV H77	41	A0201	45	VMGASNLHPL	60,33
353	HCV H77	41	A0201	22	FLSRPVRLVI	19,68
354	HCV H77	41	A0201	30	VIIHPRRPLV	16,26
355	HCV H77	41	A24	21	WFLSRPVRL	30
356	HCV H77	41	A24	42	AYAVMGASNL	200
357	HCV H77	41	A68.1	89	HVMSLV SIR	400
358	HCV H77	41	A68.1	103	STATARSRR	100
359	HCV H77	41	A68.1	100	TTGSTATAR	100
360	HCV H77	41	A68.1	91	MSLV SIREK	18
361	HCV H77	41	A68.1	102	GSTATARSR	15
362	HCV H77	41	A68.1	28	RLVIIHPRR	10
363	HCV H77	41	A68.1	111	RPLCAQSRR	10
364	HCV H77	41	A68.1	19	STWFLSRPVR	50
365	HCV H77	41	A68.1	99	KTTGSTATAR	50
366	HCV H77	41	A68.1	26	PVRLVIIHPR	20
367	HCV H77	41	A68.1	16	TSPSTWFLSR	15
368	HCV H77	41	A68.1	102	GSTATARSRR	15
369	HCV H77	41	A68.1	113	LCAQSRGVR	10
370	HCV H77	41	B3501	33	HPRRPLVCW	30
371	HCV H77	41	B3501	61	GPSSISWPL	20
372	HCV H77	41	B3501	116	QSRRGVRWL	15
373	HCV H77	41	B3501	116	QSRRGVRWLY	30
374	HCV H77	41	B4403	71	AETGKPLMM	18
375	HCV H77	41	B4403	71	AETGKPLMMS	18
376	HCV H77	41	B7	61	GPSSISWPL	80
377	HCV H77	41	B7	116	QSRRGVRWL	40
378	HCV H77	41	B7	105	ATARSRRPL	18
379	HCV H77	41	B7	43	YAVMGASNL	12
380	HCV H77	41	B7	84	AVSAPHVMSL	60
381	HCV H77	41	B7	29	LVIIHPRRPL	45
382	HCV H77	41	B7	87	APHVMSLVSI	24
383	HCV H77	41	B7	33	HPRRPLVCWA	20
384	HCV H77	41	B7	104	TATARSRRPL	18
385	HCV H77	41	B7	60	AGPSSISWPL	12
386	HCV H77	41	B7	115	AQSRRGVRWL	12
387	HCV H77	41	B8	106	TARSRRPLC	16

388	HCV H77	41	B8	23	LSRPVRLVII	20
389	HCV H77	41	B8	106	TARSRRLCA	16
390	HCV H77	42	A0201	5	SLVMSNTRV	69, 55
391	HCV H77	42	A0201	21	KMTASRPRT	18, 84
392	HCV H77	42	A3	21	KMTASRPPR	12
393	HCV H77	42	A68.1	4	SSLVMSNTR	30
394	HCV H77	42	A68.1	24	ASRPPRTL	22, 5
395	HCV H77	42	A68.1	38	CSCASTLVR	15
396	HCV H77	42	A68.1	12	RVGCTTHMSK	240
397	HCV H77	42	A68.1	3	RSSLVMSNTR	15
398	HCV H77	42	B4403	40	CASTLVRKY	13, 5
399	HCV H77	42	B4403	39	SCASTLVRKY	54
400	HCV H77	42	B7	23	TASRPPRTL	18
401	HCV H77	42	B7	10	NTRVGCTTHM	10
402	HCV H77	43	A0201	95	VQLQAASSL	13, 62
403	HCV H77	43	A0201	102	SLCSTPPTYI	57, 38
404	HCV H77	43	A0201	33	MLDPTPYKYC	27, 87
405	HCV H77	43	A1	33	MLDPTPYKY	500
406	HCV H77	43	A24	40	KYCTSTMFW	10
407	HCV H77	43	A24	88	RSQRSRVL	12
408	HCV H77	43	A24	94	RVQLQAASSL	12
409	HCV H77	43	A24	38	PYKYCTSTMF	10
410	HCV H77	43	A24	40	KYCTSTMFWW	10
411	HCV H77	43	A3	45	TMFWWRWMMR	180
412	HCV H77	43	A3	32	AMLDPYK	45
413	HCV H77	43	A3	33	MLDPTPYKY	18
414	HCV H77	43	A3	32	AMLDPYKY	18
415	HCV H77	43	A68.1	42	CTSTMFWWR	50
416	HCV H77	43	A68.1	10	QTRASASRR	50
417	HCV H77	43	A68.1	83	LSLSSRSQR	30
418	HCV H77	43	A68.1	13	ASASRRNR	30
419	HCV H77	43	A68.1	9	EQTRASASR	15
420	HCV H77	43	A68.1	80	SSDLSSLSSR	15
421	HCV H77	43	A68.1	86	SSRSQRSPR	15
422	HCV H77	43	A68.1	45	TMFWWRWMMR	10
423	HCV H77	43	A68.1	44	STMFWWRWMMR	100
424	HCV H77	43	A68.1	31	DAMLDPYK	18
425	HCV H77	43	A68.1	3	NIIHKQEQTR	15
426	HCV H77	43	A68.1	9	EQTRASASRR	15
427	HCV H77	43	A68.1	79	LSSDLSSLSSR	15
428	HCV H77	43	A68.1	82	DLSSLSSRSQR	15
429	HCV H77	43	A68.1	85	LSSRSQRSPR	15
430	HCV H77	43	A68.1	54	PVDKAGRVV	12
431	HCV H77	43	B3501	106	TPPTYILTL	20
432	HCV H77	43	B3501	53	RPVDKAGRV	16
433	HCV H77	43	B3501	37	TPYKYCTSTM	40
434	HCV H77	43	B3501	15	ASRRNRRTTY	30
435	HCV H77	43	B3501	53	RPVDKAGRVV	16
436	HCV H77	43	B3501	24	YSHLMAQDAM	10
437	HCV H77	43	B3501	43	TSTMFWWRWM	10
438	HCV H77	43	B3501	88	RSQRSRVL	10
439	HCV H77	43	B3501	101	SSLCSTPPTY	10
440	HCV H77	43	B4403	31	DAMLDPY	27
441	HCV H77	43	B4403	30	QDAMLDPY	45

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442	HCV H77	43	B4403	101	SSLCSTPPTY	12
443	HCV H77	43	B7	89	SQRSRVQL	90
444	HCV H77	43	B7	106	TPPTYILTL	80
445	HCV H77	43	B7	71	CVVDSSNGL	20
446	HCV H77	43	B7	92	SPRVQLQAA	20
447	HCV H77	43	B7	26	HLMAQDAML	12
448	HCV H77	43	B7	18	RNRRTYSHL	40
449	HCV H77	43	B7	37	TPYKYCTSTM	20
450	HCV H77	43	B7	94	RVQLQAASSL	20
451	HCV H77	43	B8	86	SSRSQRSRV	12
452	HCV H77	44	A0201	67	VLLRTKTSV	437, 48
453	HCV H77	44	A0201	46	TLVNPVEFI	64, 67
454	HCV H77	44	A0201	31	VLLPTPPMT	46, 87
455	HCV H77	44	A0201	23	KQSVGQSKV	24, 68
456	HCV H77	44	A0201	53	FIQVQPNQL	13, 51
457	HCV H77	44	A0201	60	QLPSGGLVLL	49, 13
458	HCV H77	44	A0201	66	LVLLRTKTSV	38, 28
459	HCV H77	44	A0201	47	LVNPVEFIQV	19, 66
460	HCV H77	44	A24	52	EFIQVQPNQL	36
461	HCV H77	44	A68.1	15	YVAGCLRK	240
462	HCV H77	44	A68.1	5	VIQGPEPHR	11, 25
463	HCV H77	44	A68.1	4	GVIQGPEPHR	900
464	HCV H77	44	B3501	61	LPSGGLVLL	20
465	HCV H77	44	B4403	57	QPNQLPSGGL	20
466	HCV H77	44	B7	61	LPSGGLVLL	80
467	HCV H77	44	B7	25	SVGQSKVLL	20
468	HCV H77	44	B7	43	APHTLVNPV	12
469	HCV H77	44	B7	57	QPNQLPSGGL	120
470	HCV H77	45	A0201	11	WMFCLAPGV	854, 95
471	HCV H77	45	A0201	7	VLISWMFCL	484, 46
472	HCV H77	45	A0201	6	LVLISWMFC	25, 57
473	HCV H77	45	A0201	6	LVLISWMFCL	156, 84
474	HCV H77	45	A0201	3	QLPLVLISWM	62, 85
475	HCV H77	45	A0201	7	VLISWMFCLA	16, 05
476	HCV H77	45	A0201	26	AVVRPAFPPV	11, 56
477	HCV H77	45	A0201	54	AQFPTMEKYA	10, 25
478	HCV H77	45	A3	7	VLISWMFCL	12, 15
479	HCV H77	45	A68.1	13	FCLAPGVRR	10
480	HCV H77	45	B3501	56	FPTMEKYAM	60
481	HCV H77	45	B3501	4	LPLVLISWM	40
482	HCV H77	45	B3501	24	SPAVVRPAF	20
483	HCV H77	45	B3501	29	RPAFPPVTW	20
484	HCV H77	45	B3501	4	LPLVLISWMF	20
485	HCV H77	45	B7	4	LPLVLISWM	20
486	HCV H77	45	B7	56	FPTMEKYAM	20
487	HCV H77	45	B7	27	VVRPAFPPV	10
488	HCV H77	45	B7	6	LVLISWMFCL	20
489	HCV H77	45	B7	18	GVRRTSPAV	10
490	HCV H77	46	A68.1	1	MSMMACGIR	30
491	HCV H77	47	A0201	8	TILELGQSL	44, 56
492	HCV H77	47	A0201	8	TILELGQSLV	145, 08
493	HCV H77	47	A24	8	TILELGQSL	10, 37
494	HCV H77	47	B4403	10	LELGQSLVT	12
495	HCV H77	47	B4403	10	LELGQSLVTW	54

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496	HCV H77	47	B7	4	AASYTILEL	36
497	HCV H77	47	B7	2	ASAASYTIL	12
498	HCV H77	47	B7	1	MASAASYTIL	12
499	HCV H77	47	B7	3	SAASYTILEL	12
500	HCV H77	48	A24	8	KPHVRVSM TL	11,2
501	HCV H77	48	A68.1	13	VSMTLPKLR	30
502	HCV H77	48	A68.1	26	GSVGPQLGR	30
503	HCV H77	48	A68.1	12	RVSM TL PKLR	200
504	HCV H77	48	A68.1	15	MTLPKLRDLR	150
505	HCV H77	48	A68.1	10	HVRVSM TL PK	120
506	HCV H77	48	A68.1	31	QLGREPRGDR	10
507	HCV H77	48	B3501	42	HPAHPQPSL	20
508	HCV H77	48	B3501	8	KPHVRVSM TL	40
509	HCV H77	48	B3501	6	SAKPHVRVSM	18
510	HCV H77	48	B7	42	HPAHPQPSL	120
511	HCV H77	48	B7	12	RVSMTLPKL	20
512	HCV H77	48	B7	8	KPHVRVSM TL	80
513	HCV H77	48	B7	35	EPRGDRSHPA	20
514	HCV H77	48	B7	2	YPMRSAKPHV	12
515	HCV H77	48	B8	35	EPRGDRSHPA	32
516	HCV H77	48	B8	19	KLRDLRRGSV	18
517	HCV H77	49	A0201	22	GLSRPNTTRL	21,36
518	HCV H77	49	A24	15	PYQAVPQGL	50,4
519	HCV H77	49	A24	25	RPNTTRLAVL	12
520	HCV H77	49	A3	22	GLSRPNTTR	18
521	HCV H77	49	A3	33	VLRGHAQISR	12
522	HCV H77	49	A68.1	27	NTTRLAVLR	50
523	HCV H77	49	A68.1	17	QAVPQGLSR	15
524	HCV H77	49	A68.1	16	YQAVPQGLSR	10
525	HCV H77	49	B3501	8	LPGHSQAPY	40
526	HCV H77	49	B3501	23	LSRPNTTRL	15
527	HCV H77	49	B3501	25	RPNTTRLAVL	40
528	HCV H77	49	B3501	14	APYQAVPQGL	20
529	HCV H77	49	B7	23	LSRPNTTRL	40
530	HCV H77	49	B7	14	APYQAVPQGL	240
531	HCV H77	49	B7	25	RPNTTRLAVL	80
532	HCV H77	50	A0201	2	RLTDLSQLA	20,37
533	HCV H77	50	A0201	2	RLTDLSQLAV	285,16
534	HCV H77	50	A1	15	KMEPPLKKGK	90
535	HCV H77	50	A24	49	KWLKRPECL	12
536	HCV H77	50	A3	15	KMEPPLKKGK	45
537	HCV H77	50	A68.1	5	DLSQLAVTR	15
538	HCV H77	50	A68.1	17	EPPLKKGKR	15
539	HCV H77	50	B3501	61	SSVGEEVDAY	15
540	HCV H77	50	B4403	65	EEVDAYPCS	12
541	HCV H77	50	B4403	61	SSVGEEVDAY	54
542	HCV H77	50	B7	11	VTRAKMEPPL	40
543	HCV H77	51	A0201	32	FELCSYCPV	34,53
544	HCV H77	51	A1	29	WSEFELCSY	67,5
545	HCV H77	51	A24	36	SYCPVEEVL	336
546	HCV H77	51	A24	27	RYWSEFELC	12
547	HCV H77	51	A24	75	KFSEACGHPI	12
548	HCV H77	51	A24	27	RYWSEFELCS	10
549	HCV H77	51	A68.1	7	NVSPAVASR	300



550	HCV H77	51	A68.1	64	PVSPSSQGR	30
551	HCV H77	51	A68.1	19	GQVQPASGR	10
552	HCV H77	51	A68.1	42	EVLATYGSPA	24
553	HCV H77	51	A68.1	63	GPVSPSSQGR	10
554	HCV H77	51	B3501	38	CPVEEVLATY	80
555	HCV H77	51	B4403	41	EEVLATYGS	18
556	HCV H77	51	B4403	77	SEACGHPIDF	160
557	HCV H77	51	B4403	38	CPVEEVLATY	13, 5
558	HCV H77	51	B4403	15	REPTGQVQPA	12
559	HCV H77	51	B4403	59	ADAPGPVSPS	12
560	HCV H77	51	B7	25	SGRYWSEFEL	40
561	HCV H77	53	B3501	8	RPQCGGKHDY	80
562	HCV H77	54	A1	2	ATDVFCPIAK	125
563	HCV H77	54	A24	5	VFCPIAKLGF	12
564	HCV H77	54	A68.1	4	DVFCPIAKL	24
565	HCV H77	54	A68.1	2	ATDVFCPIAK	30
566	HCV H77	54	B7	4	DVFCPIAKL	30
567	HCV H77	55	B7	2	WGRQAASFL	40
568	HCV H77	56	A0201	13	FLLPLASTA	84, 56
569	HCV H77	56	A0201	5	NLQSVKCDFL	57, 57
570	HCV H77	56	A0201	6	LQSVKCDFL	21, 36
571	HCV H77	56	A68.1	2	AVQNLQSVK	120
572	HCV H77	56	B7	8	SVKCDFLPL	20
573	HCV H77	57	A0201	6	FVVRLFPR	16, 34
574	HCV H77	57	A24	5	WVVRLFPR	43, 2
575	HCV H77	57	B7	6	FVVRLFPR	20
576	HCV H77	58	A68.1	16	ASRGAGHRR	15
577	HCV H77	58	A68.1	1	MVGASCLER	400
578	HCV H77	58	A68.1	14	QLASRGAGHR	15
579	HCV H77	59	A0201	9	RQHGYVRFGL	12, 56
580	HCV H77	59	A1	4	ISEHGRQHGY	67, 5
581	HCV H77	59	A24	9	RQHGYVRFGL	11, 2
582	HCV H77	59	B4403	5	SEHGRQHGY	360
583	HCV H77	59	B4403	5	SEHGRQHGYV	12
584	HCV H77	60	A0201	48	KVAQHLAYPV	21, 3
585	HCV H77	60	A3	46	GLKVAQHLAY	24
586	HCV H77	60	A68.1	40	ELGFQPLK	18
587	HCV H77	60	A68.1	27	LAGHKGNPR	10
588	HCV H77	60	A68.1	26	ALAGHKGNPR	10
589	HCV H77	60	B3501	33	NPRQLWHEL	60
590	HCV H77	60	B3501	44	QPGLKVAQHL	20
591	HCV H77	60	B3501	18	SSPDPIPAL	10
592	HCV H77	60	B4403	39	HELGFQPL	12
593	HCV H77	60	B7	33	NPRQLWHEL	800
594	HCV H77	60	B7	19	SPDPIPAL	36
595	HCV H77	60	B7	44	QPGLKVAQHL	80
596	HCV H77	60	B7	28	AGHKGNPRQL	12
597	HCV H77	60	B8	33	NPRQLWHEL	16
598	HCV H77	61	A24	14	EYGS DAGGCI	50
599	HCV H77	61	A68.1	18	DAGGCIALR	30
600	HCV H77	61	A68.1	22	CIALRHVVR	10
601	HCV H77	61	A68.1	21	GCIALRHVVR	10
602	HCV H77	61	B4403	5	QELGYSEAA	12
603	HCV H77	61	B4403	13	AEYGS DAGGC	18

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604	HCV H77	61	B4403	10	SEAAEYGSDA	16
605	HCV H77	62	A0201	16	LLSEHHPLL	148,9
606	HCV H77	62	A0201	5	GLQEAEGLL	11,39
607	HCV H77	62	A0201	5	GLQEAEGLLL	87,59
608	HCV H77	62	A24	4	RGLQEAEGGL	12
609	HCV H77	62	A24	4	RGLQEAEGLL	12
610	HCV H77	62	B4403	9	AEGLLLELL	12
611	HCV H77	62	B4403	18	SEHHPLLDV	12
612	HCV H77	62	B4403	7	QEAEGLLLEL	12
613	HCV H77	63	A0201	37	KVLPTLLCL	55,67
614	HCV H77	63	A0201	29	GLVRYQVRKV	31,99
615	HCV H77	63	A0201	33	YQVRKVLPTL	22,92
616	HCV H77	63	A24	37	KVLPTLLCL	14,4
617	HCV H77	63	A24	32	RYQVRKVLPT	15
618	HCV H77	63	A3	29	GLVRYQVRK	270
619	HCV H77	63	A68.1	9	QTLPHLVPR	150
620	HCV H77	63	A68.1	37	KVLPTLLCL	12
621	HCV H77	63	A68.1	8	DQTLPHLVPR	15
622	HCV H77	63	B4403	25	SAHGGLVRY	13,5
623	HCV H77	63	B4403	1	MEGGFKADQT	13,5
624	HCV H77	63	B7	34	QVRKVLPTL	200
625	HCV H77	63	B7	14	LVPRWGRGL	20
626	HCV H77	63	B7	37	KVLPTLLCL	20
627	HCV H77	63	B7	30	LVRYQVRKV	10
628	HCV H77	63	B7	30	LVRYQVRKVL	300
629	HCV H77	63	B7	34	QVRKVLPTLL	200
630	HCV H77	64	A0201	8	ALPKFKMVL	33,28
631	HCV H77	64	A0201	15	VLAHGKPRGV	23,65
632	HCV H77	64	A0201	8	ALPKFKMVLA	11,43
633	HCV H77	64	A68.1	14	MVLAHGKPR	400
634	HCV H77	64	A68.1	13	KMVLAHGKPR	10
635	HCV H77	64	B3501	20	KPRGVHVS	12
636	HCV H77	64	B7	8	ALPKFKMVL	12
637	HCV H77	64	B7	7	DALPKFKMVL	12
638	HCV H77	64	B8	9	LPKFKMVLA	16
639	HCV H77	65	A0201	72	VALVTNYYV	33,42
640	HCV H77	65	A0201	71	GVALVTNYYV	33,47
641	HCV H77	65	A1	7	HLEGDSLAVK	36
642	HCV H77	65	A3	7	HLEGDSLAVK	45
643	HCV H77	65	A68.1	42	SSGEHNQSR	30
644	HCV H77	65	A68.1	31	RMGHS DGAR	15
645	HCV H77	65	A68.1	62	DAQDGCGR	15
646	HCV H77	65	A68.1	41	GSSGEHNQSR	15
647	HCV H77	65	A68.1	29	DVRMGHSDGA	12
648	HCV H77	65	A68.1	31	RMGHS DGARR	10
649	HCV H77	65	B3501	48	QSRPRSLCL	15
650	HCV H77	65	B3501	24	QSNLLDVRM	10
651	HCV H77	65	B4403	70	RGVALVTNY	27
652	HCV H77	65	B4403	70	RGVALVTNYY	13,5
653	HCV H77	65	B7	48	QSRPRSLCL	40
654	HCV H77	65	B8	48	QSRPRSLCL	80
655	HCV H77	65	B8	66	GCGIRGVAL	16
656	HCV H77	66	A0201	51	ALGHCWWRGV	23,65
657	HCV H77	66	A0201	43	SMQVGHLEAL	17,39

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658	HCV H77	66	A68.1	50	EALGHCWWR	30
659	HCV H77	66	A68.1	22	HLVALGCVR	10
660	HCV H77	66	A68.1	24	VALGCVRSR	10
661	HCV H77	66	A68.1	23	LVALGCVRSR	400
662	HCV H77	66	A68.1	7	STKAQRCSNR	50
663	HCV H77	66	B4403	49	LEALGHCWW	24
664	HCV H77	66	B7	28	CVRSRDLGAL	200
665	HCV H77	66	B7	14	SNRGVEHQHL	40
666	HCV H77	66	B7	25	ALGCVRSRDL	12
667	HCV H77	66	B7	40	AGGSMQVGHL	12
668	HCV H77	67	A68.1	1	MVIHIGASK	240
669	HCV H77	67	A68.1	1	MVIHIGASKR	400
670	HCV H77	69	A68.1	14	VAHPSDDTR	11, 25
671	HCV H77	69	A68.1	13	VVAHPSDDTR	600
672	HCV H77	69	B4403	9	AEQGVVAHPS	27
673	HCV H77	69	B4403	19	DDTRGRSAHF	15
674	HCV H77	70	A0201	59	KLRCGEFAV	107, 3
675	HCV H77	70	A0201	52	KQIDMTSKL	31, 08
676	HCV H77	70	A1	44	RAEGGAPDK	36
677	HCV H77	70	A24	52	KQIDMTSKL	15, 84
678	HCV H77	70	A24	3	RYMAGIDRT	15
679	HCV H77	70	A24	3	RYMAGIDRTI	210
680	HCV H77	70	A24	93	RSVQDGIGRL	12
681	HCV H77	70	A68.1	18	PVAPGREGK	36
682	HCV H77	70	A68.1	93	RSVQDGIGR	30
683	HCV H77	70	A68.1	36	AQVPHVEGR	15
684	HCV H77	70	A68.1	26	KQLTNKKDR	10
685	HCV H77	70	A68.1	101	RLVHNTRVR	10
686	HCV H77	70	A68.1	111	IIGDMVKPR	10
687	HCV H77	70	A68.1	1	MTRYMAGIDR	50
688	HCV H77	70	A68.1	67	VPGGHRRGHR	15
689	HCV H77	70	A68.1	84	TLANARDTPR	15
690	HCV H77	70	A68.1	52	KQIDMTSKLR	10
691	HCV H77	70	A68.1	98	GIGRLVHNTR	10
692	HCV H77	70	A68.1	110	AIIGDMVKPR	10
693	HCV H77	70	B3501	20	APGREGKQL	30
694	HCV H77	70	B3501	117	KPRGIAHLV	24
695	HCV H77	70	B3501	91	TPRSVQDGI	24
696	HCV H77	70	B3501	77	HPTPRGVTL	20
697	HCV H77	70	B3501	57	TSKLRCGEF	15
698	HCV H77	70	B3501	107	RVRAIIGDM	12
699	HCV H77	70	B3501	48	GAPDKQIDM	12
700	HCV H77	70	B3501	93	RSVQDGIGRL	10
701	HCV H77	70	B4403	45	AEGGAPDKQI	18
702	HCV H77	70	B7	20	APGREGKQL	240
703	HCV H77	70	B7	77	HPTPRGVTL	80
704	HCV H77	70	B7	91	TPRSVQDGI	80
705	HCV H77	70	B7	107	RVRAIIGDM	50
706	HCV H77	70	B7	117	KPRGIAHLV	40
707	HCV H77	70	B7	94	SVQDGIGRL	20
708	HCV H77	70	B7	79	TPRGVTLANA	20
709	HCV H77	70	B7	115	MVKPRGIAHL	20
710	HCV H77	70	B7	6	AGIDRTIAVL	12
711	HCV H77	70	B7	19	VAPGREGKQL	12

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712	HCV H77	70	B7	107	RVRAIIIGDMV	10
713	HCV H77	70	B8	77	HPTPRGVTL	16
714	HCV H77	70	B8	29	TNKKDRPAQV	12

**Example 1.2: Immunogenicity of ncHCV peptides according to the present invention:**

To determine if the peptides provided with the present invention are potentially immunogenic, three peptides from HCV 1b for the HLA-A\*0201 allele were chosen and HLA-A\*0201 transgenic mice (HHD) vaccinated therewith.

**Example 1.2.1: Vaccination of Mice with ncORFs according to the present invention (Ipep 1371, Ipep 1372, Ipep 1373)**

HLA-A\*0201-transgenic mice (5 per group) were vaccinated subcutaneously as follows:

- 1) 1371 (HCV-H77 ncORF(1-3)11 TLWAGPLLKV) + CpG 1668
- 2) 1372 (HCV-H77 ncORF(1-3)13 LLLQRWALV) + CpG 1668
- 3) 1373 (HCV-H77 ncORF(1-3)27 FMLGALLPI) + CpG 1668

7 days after the vaccination draining lymph nodes were removed and the cells were activated ex vivo with peptides to determine the number of IFN-g-producing peptide-specific T cells (Elispot assay). As can be seen in Figure 1, all peptides induce high numbers of peptide-specific T cells ("Background" means "Medium Control", i.e. cells cultured without peptide).

**Example 1.2.2: Vaccination of Mice with ncORFs according to the present invention (Ipep 1445, Ipep 1447)**

HLA-A\*0201-transgenic mice (5 per group) were vaccinated subcutaneously as follows:

- 1) 1445 (HCV-1b ncORF(1-3)36 RLLQLKYCV + CpG 1668
- 2) 1447 (HCV-1b ncORF(1-3)36 FLYLPLSFAV + CpG 1668

7 days after the vaccination spleens were removed and the cells were activated ex vivo with peptides to determine the number of

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IFN-g-producing peptide-specific T cells (Elispot assay). As can be seen in Figure 2, both peptides induce high numbers of peptide-specific T cells ("Background" means "Medium Control", i.e. cells cultured without peptide).

**Example 1.3: HCV patient in vivo relevance of the ncHCV peptides according to the present invention:**

Since those ncORF peptides are immunogenic in tg-mice, the present peptides were analysed in an ELISPOT assay on PBL's from HCV+ patients.

**Example 1.3.1: Elispot with HCV patient-derived cells and with ncORFs according to the present invention (Ipep 1371, Ipep 1372, Ipep 1373)**

The patient had a chronic HCV infection in 1992 that was cured under IFN-alpha mono-therapy from 1993 to 1994. Patient-derived peripheral blood mononuclear cells (PBMC) frozen in 1996 were thawed to perform an IFN-g Elispot assay with the following peptides:

1) 1371 (HCV-H77 ncORF(1-3)11	TLWAGPLLKV)
2) 1372 (HCV-H77 ncORF(1-3)13	LLLQRWALV)
3) 1373 (HCV-H77 ncORF(1-3)27	FMLGALLPI)
4) 1006 (HCV-derived)	MWNFISGIQYLAGLSTLPGN
5) 84 (HCV-derived)	GYKVLVLNPSVAAT
6) CMV pp65	NLVPMVATV
7) Influenza A Matrix (aa58-67)	GILGFVFTL

As can be seen in Table 5 and Figure 3, the peptides 1371, 1372, and 1373 as well as the positive control peptides (CMV-derived, Influenza-derived) induce high numbers of peptide-specific T cells.

ELISPOT-results Patient MRG Plate 11_01_03			
Peptide	Counts-mean size >10	Counts-mean size >25	Counts-mean size >75
1373	159	86	3
1372	43	36	13
1371	24	15	2
Medium-control	2	1	0
PHA	Confluent	Confluent	Confluent
Flu-Ma	48	36	17
CMV	28	17	6

Table 5: ELIspot results

**Example 1.4: Peptides from reading frames 4 to 6 are immunogenic in transgenic mice**

(Ipep 1490, Ipep 1491; Ipep 1492; Ipep 1493; Ipep 1494, Ipep 82) HLA-A\*0201-transgenic mice (5 per group) were vaccinated subcutaneously as follows:

- 1) 1490 (HCV-1b ncORF(4-6) KMLNRRVLWV) + CpG 1668
- 2) 1491 (HCV-1b ncORF(4-6) VLIMCQLPLV) + CpG 1668
- 3) 1492 (HCV-1b ncORF(4-6) MLNRRVLWV) + CpG 1668
- 4) 1493 (HCV-1b ncORF(4-6) TILELEQSFV) + CpG 1668
- 5) 1494 (HCV-1b ncORF(4-6) KMMSPHAAV) + CpG 1668
- 6) 82 (EBV, control GLCTLVAML) + CpG 1668

7 days after the vaccination spleens were removed and the cells were activated ex vivo with peptides to determine the number of IFN-g-producing peptide-specific T cells (Elispot assay). As can be seen in Figure 4, two of the four peptides (#1491, #1494) induce high numbers of peptide-specific T cells.

With the present HCV model according to example 1, it could be clearly demonstrated that

- within different ORFs of a viral genome possible encoded CTL epitopes may be identified,

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- peptides of those ORF's are immunogenic in tg-mice, especially also in reading frames 4 to 6 and
- give positive ELIspot results in HCV+ patients, i.e. are relevant pathological parameters in HCV infections.

**Example 2: HIV**

In the present example, the genome of HIV was analysed according to the present invention with respect to its non coding ORFs. The results are depicted in table 6. From there the HIV-ncORFs with a minimum length of 7 amino acid residues or those being longer than 7 amino acid residues are deriveable which may preferably be used as antigens for the preparation of a HIV vaccine.

More preferred, ORFs having a minimum length of 9 amino acid residues are selected from table 6, especially if they are T-cell antigens, B-cell antigens or both.

The HIV-ORFs are therefore preferably selected from ORF-Nos. 13, 23, 27, 69 and 80 in Table 6.

No.of ORF	Start	Stop	Sequence	Length
1	336	1874	GAG-sequence	
2	380	424	MGKNSVKARGKEKI	14
3	440	474	MGKQGARTIRS	11
4	793	804	MHG	3
6	952	1020	MRKLQNGIECIQCMQGLLHQAR	22
7	968	976	MG	2
8	1079	1093	MDDK	4
9	1127	1150	MDNPGIK	7
10	1222	1227	M	1
11	1309	1338	MRTQIVRLF	9
12	1382	1411	MSGSGRTRP	9
13	1580	1618	MWKGRTPNERLY	12
14	1631	4674	POL-sequence (no Initiation Meth.)	
15	1920	1934	MIQY	4
16	1940	4674	POL-sequence	
17	1957	2013	METKNDRGNWRFYQSKTV	18

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18	2010	2027 MIRYS	5
19	2181	2209 MAQKLNNGH	9
20	2200	2289 MAIDRRKNKSISRNLRYRNGKGRENFKNWA	29
21	2341	2373 MEKISRFQRT	10
22	2460	2492 MWVMHIFQFP	10
23	2493	2537 MKTSGSILHLPYLV	14
24	2541	2624 MRHQGLDISTMCFHRDGDHQQYSKVA	27
25	2685	2699 MICM	4
26	2826	2864 MNSILINGQYSL	12
27	2845	2898 MDSTAYSAARKRQLDCQ	17
28	2895	2912 MTYRS	5
29	2968	2973 M	1
30	3075	3106 MECIMTHQKT	10
31	3139	3171 MDISNLSRAI	10
32	3192	3227 MQERGVPTLMM	11
33	3277	3294 MGKDS	5
		33336	
34	3322	9 MGNMVDRLASHLDS	15
35	3406	3471 MFPVRETHSRSRNVLCRWGS	21
36	3453	3458 M	1
37	3459	3488 MGQLAGRLN	9
38	3501	3539 MLLIEEDKKLSP	12
39	3633	3640 MH	2
40	3733	3768 MGTSTQRNWRK	11
41	3765	3776 MNK	3
42	3819	3827 ME	2
43	3840	3905 MNMRNITVIGEQWLVLTCHE	21
44	3937	3981 MSAKRRSHAWTSRL	14
45	3963	3974 MDK	3
		MATRLYTFRKSYPGSSSCSQWIYRSRYSRRNRAGNSILSFKISRK-	
46	3991	4191 MASKNNTYRQWQQFHQYYG	66
47	4044	4049 M	1
49	4623	5190 VIF-SEQUENCE	
50	4682	4729 MEKFSKTPYVCFRES	15
51	4711	4776 MFQGLGDGFIDITMKALIQE	21
52	4733	4744 MVL	3
53	4804	4818 MLDW	4
54	4886	4906 MEEKEI	6
55	5141	5427 VPR-SEQUENCE	
56	5191	5220 MDTRAFRGA	9



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57	5223	5267 MKLLDIFLGFGSMA	14
58	5280	5321 MKLMGILGQEWKP	13
59	5412	5626 TAT-1-SEQUENCE	
60	5551	5626 REV-1-SEQUENCE	
61	5638	5643 M	1
62	5643	5884 VPU-SEQUENCE	
63	5803	8384 ENV-SEQUENCE	
65	6065	6070 M	1
66	6095	6107 MTW	3
67		MGSKPKAMCKINPT	14
68		MRI	3
69	6209	6259 MLLIPIVVIPIVVAGK	16
70	6335	6361 MHFFINLI	8
71	6374	6397 MILPAIR	7
72	6498	6503 M	1
73	6518	6580 MEQDHVQMSAQYNVHMELGQ	20
74	6531	6572 MYKCQHSTMYTWN	13
75	6602	6613 MAV	3
76	6656	6670 MLKP	4
77	6828	6857 MECHFKTDS	9
78	6833	6844 MPL	3
79	7068	7148 MQNKTIYKHVAGSRKSNVCPHQRTN	26
80	7121	7180 MPLPSADKLDVHQILQGCY	19
81	7148	7196 MFIKYRAAINKRWW	15
82	7187	7243 MVVITTMGPRSSDLEEEI	18
83	7649	7696 MLVGVINLWNRFGIT	15
84	7784	7807 MNKNYWN	7
85	7812	7838 MGKFVELV	8
86	8264	8278 MPQP	4
87	8390	9006 NEF-SEQUENCE	
88	8425	8460 MAYCKGKNETS	11
89	8472	8564 MGWEQHLETWKNMEQSQVAIQQLPMLLVPG	30
90	8809	8835 MVLQASTS	8
91	8901	8933 MEWMTLREKC	10
92	9097	9147 MLHISS	6

Table 6

Non-coding HIV-ORFs = all ORFs, except GAG, POL, VIF, VPR, TAT, REV, VPU, ENV and NEF (ORF-Nos. 1, 14, 16, 49, 55, 59, 60, 62,

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63 and 87 in Table 6)

HIV selected ORFs: ORF-Nos. 2, 3, 6, 9, 11, 12, 13, 17, 19, 20, 21, 22, 23, 24, 26, 27, 30, 31, 32, 34, 35, 37, 38, 40, 43, 44, 46, 48, 50, 56, 57, 58, 64, 67, 69, 70, 71, 73, 74, 77, 79, 80, 81, 82, 83, 84, 85, 88, 89, 90 and 91 in Table 6.

### 3. Human Papilloma Virus (HPV)

In this example, possible ncORF epitopes with superior immunisation properties of HPV are identified as in Example 1 for HCV epitopes. The results are depicted in the following table 7:

No	Species	strain	Frame	ORF	HLA	Sequence	Score	Length
1	HPV	type 16	1	2	A68.1	IVCPICSQK	180,00	9
2	HPV	type 16	1	3	B*2705	LQKGDYLK	200,00	8
3	HPV	type 16	1	3	B*5102	MAILKWKL	181,50	8
4	HPV	type 16	1	3	B*5103	KAKTAGMAI	133,10	9
5	HPV	type 16	1	3	B*5102	KAKTAGMAI	110,00	9
6	HPV	type 16	1	3	A*0201	GMAILKWKL	115,71	9
7	HPV	type 16	1	3	Cw*0401	DYLVKAKTAGM	120,00	10
8	HPV	type 16	1	3	B*5801	KTAGMAILKW	348,48	10
9	HPV	type 16	1	3	B62	ILKWKL SRCY	312,00	10
10	HPV	type 16	1	4	B*2705	TLYAKHHL	150,00	8
11	HPV	type 16	1	4	B*5102	YAKHHLQI	242,00	8
12	HPV	type 16	1	4	B*5102	VGVA VSTV	132,00	9
13	HPV	type 16	1	4	B*5103	VAVSTVVEV	121,00	9
14	HPV	type 16	1	4	B*5102	VAVSTVVEV	330,00	9
15	HPV	type 16	1	4	A68.1	STVVEVGER	100,00	9
16	HPV	type 16	1	4	A68.1	EVGERVLVK	720,00	9
17	HPV	type 16	1	4	B14	ERVLVKDTL	180,00	9
18	HPV	type 16	1	4	B*2705	ERVLVKDTL	200,00	9
19	HPV	type 16	1	4	A68.1	LVKDTLYAK	120,00	9
20	HPV	type 16	1	4	B*5102	VGVA VSTVV	132,00	10
21	HPV	type 16	1	4	B*5201	VGVA VSTVV	198,00	10
22	HPV	type 16	1	4	B60	GERVLVKDTL	176,00	10
23	HPV	type 16	1	4	B*2705	ERVLVKDTLY	100,00	10
24	HPV	type 16	1	4	A3	VLVKDTLYAK	135,00	10
25	HPV	type 16	1	4	Cw*0401	LYAKHHLQIF	220,00	10
26	HPV	type 16	1	4	A24	LYAKHHLQIF	120,00	10
27	HPV	type 16	1	5	B*3901	LHLDLHPV	120,00	8
28	HPV	type 16	1	6	B*2705	IRTGNPFS	200,00	8
29	HPV	type 16	1	6	B*2705	VQILGGLIY	100,00	9
30	HPV	type 16	1	6	B62	VQILGGLIY	192,00	9
31	HPV	type 16	1	6	A*0201	LIYIIDWWC	153,29	9
32	HPV	type 16	1	6	A24	IYIIDWWCL	300,00	9
33	HPV	type 16	1	6	Cw*0401	IYIIDWWCL	200,00	9
34	HPV	type 16	1	6	B*3701	IDWWCLHFL	200,00	9
35	HPV	type 16	1	6	B*3901	LHFLMSFHL	180,00	9
36	HPV	type 16	1	6	A3	FLMSFHLTK	180,00	9
37	HPV	type 16	1	6	B*2705	IQCMSLMIR	100,00	9
38	HPV	type 16	1	6	A*0201	GLIYIIDWWC	204,93	10
39	HPV	type 16	1	6	A*0201	LIYIIDWWCL	203,73	10
40	HPV	type 16	1	6	A*0201	CLHFLMSFHL	123,90	10
41	HPV	type 16	1	6	A*0201	FLMSFHLTKT	291,72	10
42	HPV	type 16	1	6	A68.1	RTGNPFSQGR	100,00	10
43	HPV	type 16	1	7	B*5102	KALQAIEL	199,65	8
44	HPV	type 16	1	7	B*2705	LQAIELQL	200,00	8
45	HPV	type 16	1	7	B*2705	VQFDGDC	100,00	8
46	HPV	type 16	1	7	B*2705	GQVDYYGL	200,00	8
47	HPV	type 16	1	7	B*5102	EGIRTYFV	145,20	8
48	HPV	type 16	1	7	B*2705	IRTYFVQF	1000,00	8
49	HPV	type 16	1	7	B*2705	RTYFVQFK	150,00	8
50	HPV	type 16	1	7	B*2705	IRQHLANH	200,00	8
51	HPV	type 16	1	7	B*5102	AATHTKAV	121,00	8
52	HPV	type 16	1	7	B*3901	THTKAVAL	135,00	8
53	HPV	type 16	1	7	B*5102	NPCHTTKL	146,41	8
54	HPV	type 16	1	7	B*2705	HRDSVDSA	200,00	8
55	HPV	type 16	1	7	B*2705	GRINCNSN	200,00	8

56	HPV	type 16	1	7	B*2705	LRYRFKKH	300,00	8
57	HPV	type 16	1	7	B*2705	YRFKKHCT	1000,00	8
58	HPV	type 16	1	7	B*2705	DQFLSQVK	100,00	8
59	HPV	type 16	1	7	B*5102	LAVSKNKAL	181,50	9
60	HPV	type 16	1	7	B*5102	QAIQLQLTL	199,65	9
61	HPV	type 16	1	7	B*2705	LQLTLETIY	100,00	9
62	HPV	type 16	1	7	A24	QYSNEKWTL	200,00	9
63	HPV	type 16	1	7	Cw*0401	QYSNEKWTL	200,00	9
64	HPV	type 16	1	7	A*0201	TLQDVSLEV	285,16	9
65	HPV	type 16	1	7	B*2705	LQDVSLEVY	100,00	9
66	HPV	type 16	1	7	B*2705	VQFDGDICN	100,00	9
67	HPV	type 16	1	7	B*2705	GQVDYYGLY	100,00	9
68	HPV	type 16	1	7	A1	QVDYYGLYY	125,00	9
69	HPV	type 16	1	7	B*3801	VHEGIRTYF	280,80	9
70	HPV	type 16	1	7	B*2705	IRTYFVQFK	2000,00	9
71	HPV	type 16	1	7	B*2705	VQFKDDAEK	1000,00	9
72	HPV	type 16	1	7	A68.1	EVSSPEIIR	900,00	9
73	HPV	type 16	1	7	B*2705	QRPRSEPDT	200,00	9
74	HPV	type 16	1	7	B*5102	NPCHTTKLL	146,41	9
75	HPV	type 16	1	7	B*2705	GRINCNSNT	200,00	9
76	HPV	type 16	1	7	A68.1	NTLKCLRYR	100,00	9
77	HPV	type 16	1	7	B62	TLKCLRYRF	120,00	9
78	HPV	type 16	1	7	B*2705	LRYRFKKHC	300,00	9
79	HPV	type 16	1	7	B14	YRFKKHCTL	100,00	9
80	HPV	type 16	1	7	B*2702	YRFKKHCTL	300,00	9
81	HPV	type 16	1	7	B*2705	YRFKKHCTL	10000,00	9
82	HPV	type 16	1	7	B*2705	SEWQRDQFL	150,00	9
83	HPV	type 16	1	7	B60	SEWQRDQFL	160,00	9
84	HPV	type 16	1	7	B*2705	QRDQFLSQV	600,00	9
85	HPV	type 16	1	7	B*5801	KTTTVSTGF	180,00	9
86	HPV	type 16	1	7	B*5102	KALQAIQLQL	165,00	10
87	HPV	type 16	1	7	B*2705	LQAIQLQLTL	200,00	10
88	HPV	type 16	1	7	B*2705	SQYSNEKWTL	1000,00	10
89	HPV	type 16	1	7	B*2705	LQDVSLEVYL	200,00	10
90	HPV	type 16	1	7	B*2705	VQFDGDICNT	100,00	10
91	HPV	type 16	1	7	Cw*0401	QFDGDICNTM	150,00	10
92	HPV	type 16	1	7	A*0201	YICERASVTV	180,37	10
93	HPV	type 16	1	7	B60	VEGQVDYYGL	320,00	10
94	HPV	type 16	1	7	B*2705	GQVDYYGLYY	100,00	10
95	HPV	type 16	1	7	B62	GQVDYYGLYY	116,16	10
96	HPV	type 16	1	7	B*5102	YGLYVVEGI	580,80	10
97	HPV	type 16	1	7	A68.1	FVQFKDDAEK	180,00	10
98	HPV	type 16	1	7	B*2702	VQFKDDAEKY	100,00	10
99	HPV	type 16	1	7	B*2705	VQFKDDAEKY	500,00	10
100	HPV	type 16	1	7	B*5102	DAEKYSKNKV	110,00	10
101	HPV	type 16	1	7	B*5103	DAEKYSKNKV	121,00	10
102	HPV	type 16	1	7	B*2705	IRQHLANHPA	200,00	10
103	HPV	type 16	1	7	B*5102	HPAATHTKAV	242,00	10
104	HPV	type 16	1	7	B*5102	LGTEETTQTTI	117,13	10
105	HPV	type 16	1	7	A68.1	ETQTTTQRP	150,00	10
106	HPV	type 16	1	7	A68.1	DTGNPCHTFK	180,00	10
107	HPV	type 16	1	7	B*2705	HRDSVDSAPI	600,00	10
108	HPV	type 16	1	7	B*2705	GRINCNSNTT	200,00	10
109	HPV	type 16	1	7	B*3901	VHLKGDANTL	180,00	10
110	HPV	type 16	1	7	B*5801	NTLKCLRYRF	145,20	10
111	HPV	type 16	1	7	B*2702	LRYRFKKHCT	100,00	10
112	HPV	type 16	1	7	B*2705	LRYRFKKHCT	1000,00	10
113	HPV	type 16	1	7	Cw*0401	RYRFKKHCTL	200,00	10
114	HPV	type 16	1	7	A24	RYRFKKHCTL	400,00	10
115	HPV	type 16	1	7	B*2702	YRFKKHCTLY	1000,00	10
116	HPV	type 16	1	7	B*2705	YRFKKHCTLY	5000,00	10
117	HPV	type 16	1	7	B*2705	QRDQFLSQVK	2000,00	10
118	HPV	type 16	1	8	B*2705	WRAFCFAL	2000,00	8
119	HPV	type 16	1	8	B*5102	CAFVCLPI	1000,00	8
120	HPV	type 16	1	8	B*5102	AAFVCVYI	1000,00	8
121	HPV	type 16	1	8	B*2705	WRAFCFALC	200,00	9
122	HPV	type 16	1	8	Cw*0401	AFCFALCAF	220,00	9
123	HPV	type 16	1	8	Cw*0301	FALCAFVCL	200,00	9
124	HPV	type 16	1	8	B*5102	FALCAFVCL	300,00	9
125	HPV	type 16	1	8	B*5103	SAAFVCVYI	121,00	9
126	HPV	type 16	1	8	B*5102	SAAFVCVYI	242,00	9
127	HPV	type 16	1	8	A24	VYIHIINNI	126,00	9
128	HPV	type 16	1	8	Cw*0401	HYWRAFCFAL	200,00	10
129	HPV	type 16	1	8	A24	HYWRAFCFAL	200,00	10
130	HPV	type 16	1	8	B*2705	WRAFCFALCA	200,00	10
131	HPV	type 16	1	8	Cw*0401	CFALCAFVCL	220,00	10
132	HPV	type 16	1	8	B*5102	LPINTSAAV	660,00	10
133	HPV	type 16	1	8	B*5102	AAFVCVYIHI	1100,00	10
134	HPV	type 16	1	8	B*5103	AAFVCVYIHI	145,20	10
135	HPV	type 16	1	9	B*2705	TQTFCKTHK	200,00	9
136	HPV	type 16	1	10	A*0201	CLLSQYLRL	118,56	9
137	HPV	type 16	1	10	Cw*0301	CLLSQYLRL	100,00	9
138	HPV	type 16	1	10	Cw*0301	TCLLSQYLRL	100,00	10
139	HPV	type 16	1	11	B*5102	TPISLVFL	300,00	8
140	HPV	type 16	1	11	B*5102	TPHFIIQI	484,00	8
141	HPV	type 16	1	11	B*2705	IQIHSGWF	100,00	8
142	HPV	type 16	1	11	A*0201	FLTPHFIIQI	419,44	10
143	HPV	type 16	1	12	B*5102	LALVLWTL	150,00	8
144	HPV	type 16	1	12	B*2705	YRLTKVKF	300,00	8
145	HPV	type 16	1	12	B*3901	FHWIFVHL	270,00	8

146	HPV	type 16	1	12	B*5102	FANIQIIL	121,00	8
147	HPV	type 16	1	12	B*5102	MATAYFFI	200,00	8
148	HPV	type 16	1	12	B*2705	YQTIYTLK	200,00	8
149	HPV	type 16	1	12	B*5102	KALGLLQI	726,00	8
150	HPV	type 16	1	12	B*5102	LALVLTLL	150,00	9
151	HPV	type 16	1	12	A3	TLHYRLTK	180,00	9
152	HPV	type 16	1	12	A*0201	LLHYRLTKV	271,95	9
153	HPV	type 16	1	12	A24	HYRLTKVKF	110,00	9
154	HPV	type 16	1	12	Cw*0401	HYRLTKVKF	132,00	9
155	HPV	type 16	1	12	Cw*0401	KFWIFVHL	330,00	9
156	HPV	type 16	1	12	Cw*0401	LFANIQIIL	200,00	9
157	HPV	type 16	1	12	B*2705	CQNHMATAY	100,00	9
158	HPV	type 16	1	12	A*0201	FIYEGNKCL	177,27	9
159	HPV	type 16	1	12	A*0205	FIYEGNKCL	189,00	9
160	HPV	type 16	1	12	A24	IYEGNKCLL	300,00	9
161	HPV	type 16	1	12	Cw*0401	IYEGNKCLL	200,00	9
162	HPV	type 16	1	12	A24	IYLGVLVLL	300,00	9
163	HPV	type 16	1	12	Cw*0401	IYLGVLVLL	400,00	9
164	HPV	type 16	1	12	A*0201	YLGLVLLV	735,86	9
165	HPV	type 16	1	12	A*0201	VLLVKMYQT	107,81	9
166	HPV	type 16	1	12	A*0201	KMYQTIYTL	397,44	9
167	HPV	type 16	1	12	A*0205	KMYQTIYTL	126,00	9
168	HPV	type 16	1	12	B*2705	KMYQTIYTL	750,00	9
169	HPV	type 16	1	12	A24	IYTLKALGL	200,00	9
170	HPV	type 16	1	12	Cw*0401	IYTLKALGL	200,00	9
171	HPV	type 16	1	12	A68.1	LVLTLLHYR	400,00	10
172	HPV	type 16	1	12	A*0201	VLTLLHYRL	301,42	10
173	HPV	type 16	1	12	B*2705	VLTLLHYRL	150,00	10
174	HPV	type 16	1	12	A*0201	TLHYRLTKV	591,89	10
175	HPV	type 16	1	12	B*2702	YRLTKVKFHW	100,00	10
176	HPV	type 16	1	12	B*2705	YRLTKVKFHW	200,00	10
177	HPV	type 16	1	12	A*0201	RLTKVKFHWI	109,02	10
178	HPV	type 16	1	12	Cw*0401	KFWIFVHLF	300,00	10
179	HPV	type 16	1	12	B*2705	HLFANIQIIL	150,00	10
180	HPV	type 16	1	12	B*2705	CQNHMATAYF	100,00	10
181	HPV	type 16	1	12	A3	HMATAYFFIY	108,00	10
182	HPV	type 16	1	12	Cw*0401	FFIYEGNKCL	200,00	10
183	HPV	type 16	1	12	A*0201	FIYEGNKCLL	177,27	10
184	HPV	type 16	1	12	A*0205	FIYEGNKCLL	189,00	10
185	HPV	type 16	1	12	A*0201	CLLDIYLLGL	745,36	10
186	HPV	type 16	1	12	A*0205	CLLDIYLLGL	151,20	10
187	HPV	type 16	1	12	A3	YLGLVLLVK	202,50	10
188	HPV	type 16	1	12	A3	KMYQTIYTLK	450,00	10
189	HPV	type 16	1	12	B*2705	KMYQTIYTLK	750,00	10
190	HPV	type 16	1	12	Cw*0401	IYTLKALGLL	440,00	10
191	HPV	type 16	1	12	A24	IYTLKALGLL	200,00	10
192	HPV	type 16	1	13	B*2705	HRATIMAF	1000,00	8
193	HPV	type 16	1	13	B*5102	RATIMAFV	100,00	8
194	HPV	type 16	1	13	B*2705	TNYLLLLL	100,00	8
195	HPV	type 16	1	13	B*2705	VQICHYVL	200,00	8
196	HPV	type 16	1	13	B*3901	CHYVLPYL	180,00	8
197	HPV	type 16	1	13	B*5102	LPYLLQKL	665,50	8
198	HPV	type 16	1	13	B*3901	LHIKILTL	270,00	8
199	HPV	type 16	1	13	B*2705	GRNMIYSL	2000,00	8
200	HPV	type 16	1	13	B*2705	SLFFNCAK	150,00	8
201	HPV	type 16	1	13	B*5102	MPKYSINLI	220,00	9
202	HPV	type 16	1	13	B*2705	HRATIMAFV	600,00	9
203	HPV	type 16	1	13	Cw*0401	AFVGVNTNYL	200,00	9
204	HPV	type 16	1	13	Cw*0301	VGVTNYLL	120,00	9
205	HPV	type 16	1	13	A24	NYLLLLLIL	360,00	9
206	HPV	type 16	1	13	Cw*0401	NYLLLLLIL	400,00	9
207	HPV	type 16	1	13	A*0201	LLLLILHAV	1006,21	9
208	HPV	type 16	1	13	B*5103	HAVQICHYV	110,00	9
209	HPV	type 16	1	13	B*5102	HAVQICHYV	363,00	9
210	HPV	type 16	1	13	B*3901	CHYVLPYLL	180,00	9
211	HPV	type 16	1	13	A68.1	YVLPYLLQK	360,00	9
212	HPV	type 16	1	13	A*0201	KLHIKILTL	171,97	9
213	HPV	type 16	1	13	B*2705	LRSTYDMGR	1000,00	9
214	HPV	type 16	1	13	B*2702	GRNMIYSLF	200,00	9
215	HPV	type 16	1	13	B*2705	GRNMIYSLF	1000,00	9
216	HPV	type 16	1	13	B*5102	IGYNEHRATI	484,00	10
217	HPV	type 16	1	13	B*5103	IGYNEHRATI	132,00	10
218	HPV	type 16	1	13	Cw*0401	GYNEHRATIM	132,00	10
219	HPV	type 16	1	13	B*5102	RATIMAFVGV	100,00	10
220	HPV	type 16	1	13	B*5103	RATIMAFVGV	121,00	10
221	HPV	type 16	1	13	B*5102	MAFVGVTNYL	332,75	10
222	HPV	type 16	1	13	Cw*0401	AFVGVNTNYL	240,00	10
223	HPV	type 16	1	13	B*2705	TNYLLLLLIL	100,00	10
224	HPV	type 16	1	13	A*0201	YLLLLILHA	194,48	10
225	HPV	type 16	1	13	A*0201	LLLLILHAV	1006,21	10
226	HPV	type 16	1	13	B*5102	HAVQICHYVL	165,00	10
227	HPV	type 16	1	13	B*2705	VQICHYVLPY	100,00	10
228	HPV	type 16	1	13	A*0205	YVLPYLLQKL	252,00	10
229	HPV	type 16	1	13	Cw*0301	YVLPYLLQKL	120,00	10
230	HPV	type 16	1	13	B*5102	LPYLLQKLHI	2420,00	10
231	HPV	type 16	1	13	B*5103	LPYLLQKLHI	159,72	10
232	HPV	type 16	1	13	A*0201	YLLQKLHIKI	177,57	10
233	HPV	type 16	1	13	B*2705	LRSTYDMGRN	200,00	10
234	HPV	type 16	1	13	B*2702	GRNMIYSLFF	200,00	10
235	HPV	type 16	1	13	B*2705	GRNMIYSLFF	1000,00	10

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236	HPV	type 16	1	14	B*2705	CMYVELVL	250,00	8
237	HPV	type 16	1	14	Cw*0301	CKYCMYVEL	100,00	9
238	HPV	type 16	1	14	B*2705	CMYVELVLF	125,00	9
239	HPV	type 16	1	14	A*0201	VLFVVYMFV	3609,23	9
240	HPV	type 16	1	14	Cw*0401	VYMFVCACM	120,00	9
241	HPV	type 16	1	14	Cw*0401	MFVCACMCL	220,00	9
242	HPV	type 16	1	14	Cw*0401	KYCMYVELVL	200,00	10
243	HPV	type 16	1	14	A24	KYCMYVELVL	560,00	10
244	HPV	type 16	1	14	A*0201	CMYVELVLFV	2033,39	10
245	HPV	type 16	1	14	A*0201	LVLFFVYMFV	315,81	10
246	HPV	type 16	1	14	A*0201	VLFVVYMFVC	170,91	10
247	HPV	type 16	1	14	A*0201	YMFVCACMCL	262,59	10
248	HPV	type 16	1	14	B*2705	YMFVCACMCL	250,00	10
249	HPV	type 16	1	15	A*0201	FLFYIYYIL	223,61	9
250	HPV	type 16	1	15	A*0205	FLFYIYYIL	126,00	9
251	HPV	type 16	1	15	B*2705	FLFYIYYIL	150,00	9
252	HPV	type 16	1	15	Cw*0301	LFLFYIYYIL	100,00	10
253	HPV	type 16	1	15	Cw*0401	LFLFYIYYIL	200,00	10
254	HPV	type 16	1	16	B*2705	CQPFHCFVL	200,00	8
255	HPV	type 16	1	17	A*0201	LLGTYFWLV	1684,90	9
256	HPV	type 16	1	17	Cw*0401	YFWLVLTNL	400,00	9
257	HPV	type 16	1	17	A*0201	VLTNLIAYL	459,40	9
258	HPV	type 16	1	17	Cw*0401	TYFWLVLTNL	400,00	10
259	HPV	type 16	1	17	A24	TYFWLVLTNL	280,00	10
260	HPV	type 16	1	17	A*0201	LVLTLNLIAYL	148,73	10
261	HPV	type 16	1	17	A*0205	LVLTLNLIAYL	142,80	10
262	HPV	type 16	1	1	B*2705	HRAANNYT	200,00	8
263	HPV	type 16	1	3	A*0201	VLLQIIKMT	107,81	9
264	HPV	type 16	1	4	B*3901	MHGDTPTL	180,00	8
265	HPV	type 16	1	4	B*3901	LHEYMDDL	405,00	8
266	HPV	type 16	1	4	B*2705	LQPETDDL	200,00	8
267	HPV	type 16	1	4	B*2705	LRLCVQST	200,00	8
268	HPV	type 16	1	4	B*3901	THVDIRTL	180,00	8
269	HPV	type 16	1	4	B*2705	IRLTLEDDL	2000,00	8
270	HPV	type 16	1	4	B*5102	TPTLHEYML	110,00	9
271	HPV	type 16	1	4	A*0201	TLHEYMLDL	201,45	9
272	HPV	type 16	1	4	A*0201	YMLDLQPET	375,57	9
273	HPV	type 16	1	4	B*2705	LQPETDDL	100,00	9
274	HPV	type 16	1	4	Cw*0301	TDLVCEYQL	100,00	9
275	HPV	type 16	1	4	A1	QAEPDRAHY	900,00	9
276	HPV	type 16	1	4	B*5102	EPDRAHYNI	220,00	9
277	HPV	type 16	1	4	B*2705	LRLCVQSTH	200,00	9
278	HPV	type 16	1	4	B*2705	VQSTHVDIR	100,00	9
279	HPV	type 16	1	4	B*2705	IRLTLEDDL	600,00	9
280	HPV	type 16	1	4	B60	LEDLLMGTL	176,00	9
281	HPV	type 16	1	4	A68.1	IVCPICSQK	180,00	9
282	HPV	type 16	1	4	A*0201	YMLDLQPETT	184,03	10
283	HPV	type 16	1	4	B40	DEIDGFAGQA	120,00	10
284	HPV	type 16	1	4	B*2705	GQAEPDRAHY	100,00	10
285	HPV	type 16	1	4	B*5102	EPDRAHYNIV	110,00	10
286	HPV	type 16	1	4	B*5201	EPDRAHYNIV	100,00	10
287	HPV	type 16	1	4	B*2705	DRAHYNIVTF	100,00	10
288	HPV	type 16	1	4	Cw*0401	TFCCCKDSTL	200,00	10
289	HPV	type 16	1	4	B*2705	LRLCVQSTHV	600,00	10
290	HPV	type 16	1	4	A68.1	CVQSTHVDIR	200,00	10
291	HPV	type 16	1	4	B*3701	VDIRTLEDDL	200,00	10
292	HPV	type 16	1	5	B*2705	AQEAQQR	100,00	8
293	HPV	type 16	1	5	B*2705	HRDAVQVL	2000,00	8
294	HPV	type 16	1	5	B*2705	KRKYLTVH	600,00	8
295	HPV	type 16	1	5	B*5102	NGWFFVEAV	220,00	9
296	HPV	type 16	1	5	B*5201	GWFFVEAVV	100,00	9
297	HPV	type 16	1	5	A68.1	YVEAVVEKK	120,00	9
298	HPV	type 16	1	5	B60	AETETAHAL	160,00	9
299	HPV	type 16	1	5	A3	ALFTAQEAQ	100,00	9
300	HPV	type 16	1	5	B*2705	ALFTAQEAQ	150,00	9
301	HPV	type 16	1	5	B*5103	EAKQHRDAV	110,00	9
302	HPV	type 16	1	5	B*2705	KQHRDAVQV	180,00	9
303	HPV	type 16	1	5	B*2705	HRDAVQVLK	2000,00	9
304	HPV	type 16	1	5	B*2702	KRKYLTVHVL	180,00	9
305	HPV	type 16	1	5	B*2705	KRKYLTVHVL	6000,00	9
306	HPV	type 16	1	5	A24	KYLTVHVLVI	210,00	9
307	HPV	type 16	1	5	B*5102	NGWFFVEAVV	220,00	10
308	HPV	type 16	1	5	B*5201	NGWFFVEAVV	500,00	10
309	HPV	type 16	1	5	B*5201	TGEDLVDFIV	100,00	10
310	HPV	type 16	1	5	Cw*0401	DFIVNDNDYL	200,00	10
311	HPV	type 16	1	5	A68.1	FTAQEAQQR	150,00	10
312	HPV	type 16	1	5	B*2705	KQHRDAVQVL	600,00	10
313	HPV	type 16	1	5	B*2705	HRDAVQVLKR	1000,00	10
314	HPV	type 16	1	5	B*2705	KRKYLTVHVL	1800,00	10
315	HPV	type 16	1	5	Cw*0401	KYLTVHVLVIL	440,00	10
316	HPV	type 16	1	5	A24	KYLTVHVLVIL	600,00	10
317	HPV	type 16	1	5	A*0201	YLVVHLVILV	735,86	10
318	HPV	type 16	1	6	B*5102	MAILKWKL	181,50	8
319	HPV	type 16	1	6	B62	ILKWKLSRCY	312,00	10
320	HPV	type 16	1	7	B*2705	MRLKHHVV	600,00	8
321	HPV	type 16	1	7	B*2705	TLYAKHHL	150,00	8
322	HPV	type 16	1	7	B*5102	YAKHHLQI	242,00	8
323	HPV	type 16	1	7	B*2705	MRLKHHVVS	200,00	9
324	HPV	type 16	1	7	B*5102	VGVAVSTV	132,00	9
325	HPV	type 16	1	7	B*5103	VAVSTVVEV	121,00	9

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326	HPV	type 16	1	7	B*5102	VAVSTVVEV	330,00	9
327	HPV	type 16	1	7	A68.1	STVVEVGER	100,00	9
328	HPV	type 16	1	7	A68.1	EVGERVLVK	720,00	9
329	HPV	type 16	1	7	B14	ERVLVKDTL	180,00	9
330	HPV	type 16	1	7	B*2705	ERVLVKDTL	200,00	9
331	HPV	type 16	1	7	A68.1	LVKDTLYAK	120,00	9
332	HPV	type 16	1	7	B14	MRLKHHVVS	120,00	10
333	HPV	type 16	1	7	B*2705	MRLKHHVVS	600,00	10
334	HPV	type 16	1	7	B*5102	VGVAVSTVV	132,00	10
335	HPV	type 16	1	7	B*5201	VGVAVSTVV	198,00	10
336	HPV	type 16	1	7	B60	GERVLVKDTL	176,00	10
337	HPV	type 16	1	7	B*2705	ERVLVKDTLY	100,00	10
338	HPV	type 16	1	7	A3	VLVKDTLYAK	135,00	10
339	HPV	type 16	1	7	Cw*0401	LYAKHHLQIF	220,00	10
340	HPV	type 16	1	7	A24	LYAKHHLQIF	120,00	10
341	HPV	type 16	1	8	B*2705	RQNGYKDK	600,00	8
342	HPV	type 16	1	8	B*2705	KQYYNIVL	3000,00	8
343	HPV	type 16	1	8	B*2705	HRWYNGPT	1000,00	8
344	HPV	type 16	1	8	B*2705	TRQNGYKDK	600,00	9
345	HPV	type 16	1	8	B*2705	KQYYNIVLM	900,00	9
346	HPV	type 16	1	8	B*2702	HRWYNGPTI	300,00	9
347	HPV	type 16	1	8	B*2705	HRWYNGPTI	3000,00	9
348	HPV	type 16	1	8	B*2705	KQYYNIVLMI	900,00	10
349	HPV	type 16	1	8	B*5201	KQYYNIVLMI	300,00	10
350	HPV	type 16	1	8	B*5201	QYYNIVLMIV	110,00	10
351	HPV	type 16	1	8	B*2702	HRWYNGPTIM	100,00	10
352	HPV	type 16	1	8	B*2705	HRWYNGPTIM	3000,00	10
353	HPV	type 16	1	10	B60	MEVIGSKLL	320,00	9
354	HPV	type 16	1	11	B*2705	VQLTQVNHYL	100,00	9
355	HPV	type 16	1	11	A*0201	QLTQVNHYL	117,49	9
356	HPV	type 16	1	11	B*2705	VQLTQVNHYL	200,00	10
357	HPV	type 16	1	13	B*2705	IRTGNPFS	200,00	8
358	HPV	type 16	1	13	B*2705	VQLLGGLIY	100,00	9
359	HPV	type 16	1	13	B62	VQLLGGLIY	192,00	9
360	HPV	type 16	1	13	A*0201	LIYIIDWWC	153,29	9
361	HPV	type 16	1	13	A24	IYIIDWWCL	300,00	9
362	HPV	type 16	1	13	Cw*0401	IYIIDWWCL	200,00	9
363	HPV	type 16	1	13	B*3701	IDWWCLHFL	200,00	9
364	HPV	type 16	1	13	B*3901	LHFLMSFHL	180,00	9
365	HPV	type 16	1	13	A3	FLMSFHLTK	180,00	9
366	HPV	type 16	1	13	B*2705	IQCMSLMIR	100,00	9
367	HPV	type 16	1	13	A*0201	GLIYIIDWWC	204,93	10
368	HPV	type 16	1	13	A*0201	LIYIIDWWCL	203,73	10
369	HPV	type 16	1	13	A*0201	CLHFLMSFHL	123,90	10
370	HPV	type 16	1	13	A*0201	FLMSFHLTKT	291,72	10
371	HPV	type 16	1	13	A68.1	RTGNPFSQGR	100,00	10
372	HPV	type 16	1	14	B*2705	LRDHIDYW	200,00	8
373	HPV	type 16	1	14	B*2705	MRLECAIY	1000,00	8
374	HPV	type 16	1	14	B*5102	KALQAIEL	199,65	8
375	HPV	type 16	1	14	B*2705	LQATELQL	200,00	8
376	HPV	type 16	1	14	B*2705	VQFDGDIC	100,00	8
377	HPV	type 16	1	14	B*2705	GQVDYYGL	200,00	8
378	HPV	type 16	1	14	B*5102	EGIRTYFV	145,20	8
379	HPV	type 16	1	14	B*2705	IRTYFVQF	1000,00	8
380	HPV	type 16	1	14	B*2705	RTYFVQFK	150,00	8
381	HPV	type 16	1	14	B*2705	IRQHLANH	200,00	8
382	HPV	type 16	1	14	B*5102	AATHTKAV	121,00	8
383	HPV	type 16	1	14	B*3901	TETKAVAL	135,00	8
384	HPV	type 16	1	14	B*5102	NECHTTKL	146,41	8
385	HPV	type 16	1	14	B*2705	HRDSVDSA	200,00	8
386	HPV	type 16	1	14	B*2705	GRINCNSN	200,00	8
387	HPV	type 16	1	14	B*2705	LRYRFKKH	300,00	8
388	HPV	type 16	1	14	B*2705	YRFKKHCT	1000,00	8
389	HPV	type 16	1	14	B*2705	DQFLSQVK	100,00	8
390	HPV	type 16	1	14	B*2705	QRLNVCQDK	2000,00	9
391	HPV	type 16	1	14	B*2705	CQDKILTHY	100,00	9
392	HPV	type 16	1	14	A24	HYENDSTDL	300,00	9
393	HPV	type 16	1	14	Cw*0401	HYENDSTDL	200,00	9
394	HPV	type 16	1	14	B*2705	LRDHIDYWK	2000,00	9
395	HPV	type 16	1	14	B*3901	DHIDYWKHM	120,00	9
396	HPV	type 16	1	14	B*2702	MRLECAIYY	200,00	9
397	HPV	type 16	1	14	B*2705	MRLECAIYY	1000,00	9
398	HPV	type 16	1	14	A24	YYKAREMGF	100,00	9
399	HPV	type 16	1	14	Cw*0401	YYKAREMGF	110,00	9
400	HPV	type 16	1	14	B*2705	AREMGFKHI	180,00	9
401	HPV	type 16	1	14	A68.1	VVPTLAVSK	120,00	9
402	HPV	type 16	1	14	B*5102	LAVSKNKAL	181,50	9
403	HPV	type 16	1	14	B*5102	QAIELQLTL	199,65	9
404	HPV	type 16	1	14	B*2705	LQLTLETIY	100,00	9
405	HPV	type 16	1	14	A24	QYSNEKWTL	200,00	9
406	HPV	type 16	1	14	Cw*0401	QYSNEKWTL	200,00	9
407	HPV	type 16	1	14	A*0201	TLQDVSLV	285,16	9
408	HPV	type 16	1	14	B*2705	LQDVSLVY	100,00	9
409	HPV	type 16	1	14	B*2705	VQFDGDICN	100,00	9
410	HPV	type 16	1	14	B*2705	GQVDYYGLY	100,00	9
411	HPV	type 16	1	14	A1	QVDYYGLYY	125,00	9
412	HPV	type 16	1	14	B*3801	VHEGIRTYF	280,80	9
413	HPV	type 16	1	14	B*2705	IRTYFVQFK	2000,00	9
414	HPV	type 16	1	14	B*2705	VQFKDDAEK	1000,00	9
415	HPV	type 16	1	14	A68.1	EVSSPEIIR	900,00	9

416	HPV	type 16 1	14	B*2705	QRRSEPDPT	200,00	9
417	HPV	type 16 1	14	B*5102	NPCHTTKLL	146,41	9
418	HPV	type 16 1	14	B*2705	GRINCNSNT	200,00	9
419	HPV	type 16 1	14	A68.1	NTLKCLRYR	100,00	9
420	HPV	type 16 1	14	B62	TLKCLRYRF	120,00	9
421	HPV	type 16 1	14	B*2705	LRYRFKKHC	300,00	9
422	HPV	type 16 1	14	B14	YRFKKHCTL	100,00	9
423	HPV	type 16 1	14	B*2702	YRFKKHCTL	300,00	9
424	HPV	type 16 1	14	B*2705	YRFKKHCTL	10000,00	9
425	HPV	type 16 1	14	B*2705	SEWQRDQFL	150,00	9
426	HPV	type 16 1	14	B60	SEWQRDQFL	160,00	9
427	HPV	type 16 1	14	B*2705	QRDQFLSQV	600,00	9
428	HPV	type 16 1	14	B*5801	KTITVSTGF	180,00	9
429	HPV	type 16 1	14	B*2705	QRLNVCQDK	200,00	10
430	HPV	type 16 1	14	B*2705	QRLNVCQDKI	600,00	10
431	HPV	type 16 1	14	B*3901	THYENDSTDL	360,00	10
432	HPV	type 16 1	14	A1	STDLRDHIDY	312,50	10
433	HPV	type 16 1	14	B*2705	LRDHIDYWKH	200,00	10
434	HPV	type 16 1	14	B*2705	MRLECAIYYK	2000,00	10
435	HPV	type 16 1	14	Cw*0401	IYYKAREMGF	110,00	10
436	HPV	type 16 1	14	A24	IYYKAREMGF	100,00	10
437	HPV	type 16 1	14	B*5102	KAREMGFKHI	133,10	10
438	HPV	type 16 1	14	B*5103	KAREMGFKHI	121,00	10
439	HPV	type 16 1	14	B*2705	AREMGFKHIN	200,00	10
440	HPV	type 16 1	14	B*5102	MGFKHINHQV	242,00	10
441	HPV	type 16 1	14	A68.1	QVVPTLAVSK	360,00	10
442	HPV	type 16 1	14	B*5102	KALQAIQLQL	165,00	10
443	HPV	type 16 1	14	B*2705	LQAIQLQLTL	200,00	10
444	HPV	type 16 1	14	B*2705	SQYSNEKWTL	1000,00	10
445	HPV	type 16 1	14	B*2705	LQDVSLEVYL	200,00	10
446	HPV	type 16 1	14	B*2705	VQFDGDICTNT	100,00	10
447	HPV	type 16 1	14	Cw*0401	QFDGDICTNTM	150,00	10
448	HPV	type 16 1	14	A*0201	YICEEASVTIV	180,37	10
449	HPV	type 16 1	14	B60	VEGQVDYGYL	320,00	10
450	HPV	type 16 1	14	B*2705	GQVDYGYGLYY	100,00	10
451	HPV	type 16 1	14	B62	GQVDYGYGLYY	116,16	10
452	HPV	type 16 1	14	B*5102	YGLYVHEGI	580,80	10
453	HPV	type 16 1	14	A68.1	FVQFKDDAEK	180,00	10
454	HPV	type 16 1	14	B*2702	VQFKDDAEKY	100,00	10
455	HPV	type 16 1	14	B*2705	VQFKDDAEKY	500,00	10
456	HPV	type 16 1	14	B*5102	DAEKYSKNKV	110,00	10
457	HPV	type 16 1	14	B*5103	DAEKYSKNKV	121,00	10
458	HPV	type 16 1	14	B*2705	IRQHLANHPA	200,00	10
459	HPV	type 16 1	14	B*5102	HPAATHTKAV	242,00	10
460	HPV	type 16 1	14	B*5102	LGTEETQTTI	117,13	10
461	HPV	type 16 1	14	A68.1	ETQTTIQRPR	150,00	10
462	HPV	type 16 1	14	A68.1	DTGNPCHTPTK	180,00	10
463	HPV	type 16 1	14	B*2705	HRDSVDSAPI	600,00	10
464	HPV	type 16 1	14	B*2705	GRINCNSNTT	200,00	10
465	HPV	type 16 1	14	B*3901	VHLKGDANTL	180,00	10
466	HPV	type 16 1	14	B*5801	NTLKCLRYRF	145,20	10
467	HPV	type 16 1	14	B*2702	LRYRFKKHCT	100,00	10
468	HPV	type 16 1	14	B*2705	LRYRFKKHCT	1000,00	10
469	HPV	type 16 1	14	Cw*0401	RYRFKKHCTL	200,00	10
470	HPV	type 16 1	14	A24	RYRFKKHCTL	400,00	10
471	HPV	type 16 1	14	B*2702	YRFKKHCTLY	1000,00	10
472	HPV	type 16 1	14	B*2705	YRFKKHCTLY	5000,00	10
473	HPV	type 16 1	14	B*2705	QRDQFLSQVK	2000,00	10
474	HPV	type 16 1	16	B*2705	MQEHPDYL	200,00	8
475	HPV	type 16 1	16	B*3901	EHPDYLQL	270,00	8
476	HPV	type 16 1	16	B*2705	LQLDIPIF	100,00	8
477	HPV	type 16 1	16	A*0201	NMLHAQTYI	153,33	9
478	HPV	type 16 1	16	A*0201	IMQEHPDYL	289,81	9
479	HPV	type 16 1	16	B60	QEHPDYLQL	352,00	9
480	HPV	type 16 1	16	B*5102	HPDYLQLDI	220,00	9
481	HPV	type 16 1	16	A*0201	LQLDIPIFL	307,21	9
482	HPV	type 16 1	16	B*2705	LQLDIPIFL	200,00	9
483	HPV	type 16 1	16	A*0201	QLDIPIFLL	113,99	9
484	HPV	type 16 1	16	Cw*0401	IPIFLLKNL	160,00	9
485	HPV	type 16 1	16	B*5102	IPIFLLKNL	330,00	9
486	HPV	type 16 1	16	A*0201	FLKKNLTIT	119,60	9
487	HPV	type 16 1	16	B*2705	MQEHPDYLQL	200,00	10
488	HPV	type 16 1	16	Cw*0401	DYLQLDIPIF	200,00	10
489	HPV	type 16 1	16	A24	DYLQLDIPIF	150,00	10
490	HPV	type 16 1	16	A*0201	YLQLDIPIFL	540,47	10
491	HPV	type 16 1	16	A*0201	LQLDIPIFLL	745,13	10
492	HPV	type 16 1	16	A*0205	LQLDIPIFLL	205,63	10
493	HPV	type 16 1	16	B*2705	LQLDIPIFLL	200,00	10
494	HPV	type 16 1	16	A3	QLDIPIFLLK	180,00	10
495	HPV	type 16 1	16	B62	LLKNLTITKY	144,00	10
496	HPV	type 16 1	17	A*0201	KMLVLMQQM	106,87	9
497	HPV	type 16 1	17	B*5201	MQQMQLVWI	150,00	9
498	HPV	type 16 1	17	A68.1	NVYLWITNK	120,00	9
499	HPV	type 16 1	17	A*0201	MLVLMQQMQV	118,24	10
500	HPV	type 16 1	17	A*0201	VLMMQQMQVWI	360,92	10
501	HPV	type 16 1	17	B*2705	MQVWIENVI	100,00	10
502	HPV	type 16 1	17	A*0201	WIENVIENVI	223,20	10
503	HPV	type 16 1	17	A*0201	YLWITNKHNC	189,68	10
504	HPV	type 16 1	18	B*5102	LALVLWTL	150,00	8
505	HPV	type 16 1	18	B*2705	YRLTKVKF	300,00	8

506	HPV	type 16	1	18	B*3901	PHWIFVHL	270,00	8
507	HPV	type 16	1	18	B*5102	FANIQIIL	121,00	8
508	HPV	type 16	1	18	B*5102	MATAYFFI	200,00	8
509	HPV	type 16	1	18	B*2705	YQTIYTLK	200,00	8
510	HPV	type 16	1	18	B*5102	KALGLLQI	726,00	8
511	HPV	type 16	1	18	A*0201	VIWFLALV	310,36	9
512	HPV	type 16	1	18	A*0201	FILALVLWT	220,61	9
513	HPV	type 16	1	18	A*0201	ILALVLWTL	626,45	9
514	HPV	type 16	1	18	B*5102	LALVLWTL	150,00	9
515	HPV	type 16	1	18	A3	TLLHYRLTK	180,00	9
516	HPV	type 16	1	18	A*0201	LLHYRLTKV	271,95	9
517	HPV	type 16	1	18	A24	HYRLTKVKF	110,00	9
518	HPV	type 16	1	18	Cw*0401	HYRLTKVKF	132,00	9
519	HPV	type 16	1	18	Cw*0401	KFWIFVHL	330,00	9
520	HPV	type 16	1	18	Cw*0401	LFANIQIIL	200,00	9
521	HPV	type 16	1	18	B*2705	CQNHMATAY	100,00	9
522	HPV	type 16	1	18	A*0201	FIYEGNKCL	177,27	9
523	HPV	type 16	1	18	A*0205	FIYEGNKCL	189,00	9
524	HPV	type 16	1	18	A24	IYEGNKCLL	300,00	9
525	HPV	type 16	1	18	Cw*0401	IYEGNKCLL	200,00	9
526	HPV	type 16	1	18	A24	IYLGILVLL	300,00	9
527	HPV	type 16	1	18	Cw*0401	IYLGILVLL	400,00	9
528	HPV	type 16	1	18	A*0201	YLIGLVLLV	735,86	9
529	HPV	type 16	1	18	A*0201	VLLVKMYQT	107,81	9
530	HPV	type 16	1	18	A*0201	KMYQTIYTL	397,44	9
531	HPV	type 16	1	18	A*0205	KMYQTIYTL	126,00	9
532	HPV	type 16	1	18	B*2705	KMYQTIYTL	750,00	9
533	HPV	type 16	1	18	A24	IYTLKALGL	200,00	9
534	HPV	type 16	1	18	Cw*0401	IYTLKALGL	200,00	9
535	HPV	type 16	1	18	A*0201	FILALVLWTL	862,39	10
536	HPV	type 16	1	18	A*0205	FILALVLWTL	151,20	10
537	HPV	type 16	1	18	A68.1	LVLWTLHLYR	400,00	10
538	HPV	type 16	1	18	A*0201	VLWTLHLYR	301,42	10
539	HPV	type 16	1	18	B*2705	VLWTLHLYR	150,00	10
540	HPV	type 16	1	18	A*0201	TLLHYRLTKV	591,89	10
541	HPV	type 16	1	18	B*2702	YRLTKVKFHW	100,00	10
542	HPV	type 16	1	18	B*2705	YRLTKVKFHW	200,00	10
543	HPV	type 16	1	18	A*0201	RLTKVKFHWI	109,02	10
544	HPV	type 16	1	18	Cw*0401	KFWIFVHLF	300,00	10
545	HPV	type 16	1	18	B*2705	HLFANIQIIL	150,00	10
546	HPV	type 16	1	18	B*2705	CQNHMATAYF	100,00	10
547	HPV	type 16	1	18	A3	HMATAYFFIY	108,00	10
548	HPV	type 16	1	18	Cw*0401	FFIYEGNKCL	200,00	10
549	HPV	type 16	1	18	A*0201	FIYEGNKCLL	177,27	10
550	HPV	type 16	1	18	A*0205	FIYEGNKCLL	189,00	10
551	HPV	type 16	1	18	A*0201	CLLDIYLIGL	745,36	10
552	HPV	type 16	1	18	A*0205	CLLDIYLIGL	151,20	10
553	HPV	type 16	1	18	A3	YLIGLVLLVK	202,50	10
554	HPV	type 16	1	18	A3	KMYQTIYTLK	450,00	10
555	HPV	type 16	1	18	B*2705	KMYQTIYTLK	750,00	10
556	HPV	type 16	1	18	Cw*0401	IYTLKALGLL	440,00	10
557	HPV	type 16	1	18	A24	IYTLKALGLL	200,00	10
558	HPV	type 16	1	19	B*2705	HRATIMAF	1000,00	8
559	HPV	type 16	1	19	B*5102	RATIMAFV	100,00	8
560	HPV	type 16	1	19	B*2705	TNYLLLLL	100,00	8
561	HPV	type 16	1	19	B*2705	VQICHYVL	200,00	8
562	HPV	type 16	1	19	B*3901	CHYVLPYL	180,00	8
563	HPV	type 16	1	19	B*5102	LPYLLQKL	665,50	8
564	HPV	type 16	1	19	B*3901	LHLKILTL	270,00	8
565	HPV	type 16	1	19	B*2705	GRNMIYSL	2000,00	8
566	HPV	type 16	1	19	B*2705	SLFFNCAK	150,00	8
567	HPV	type 16	1	19	B*5102	MPKYSINLI	220,00	9
568	HPV	type 16	1	19	B*2705	HRATIMAFV	600,00	9
569	HPV	type 16	1	19	Cw*0401	AFVGVINYL	200,00	9
570	HPV	type 16	1	19	Cw*0301	VGVTNYLLL	120,00	9
571	HPV	type 16	1	19	A24	NYLLLLLIL	360,00	9
572	HPV	type 16	1	19	Cw*0401	NYLLLLLIL	400,00	9
573	HPV	type 16	1	19	A*0201	LLLLILHAV	1006,21	9
574	HPV	type 16	1	19	B*5103	HAVQICHYV	110,00	9
575	HPV	type 16	1	19	B*5102	HAVQICHYV	363,00	9
576	HPV	type 16	1	19	B*3901	CHYVLPYLL	180,00	9
577	HPV	type 16	1	19	A68.1	YVLPYLLQK	360,00	9
578	HPV	type 16	1	19	A*0201	KLHLKILTL	171,97	9
579	HPV	type 16	1	19	B*2705	LRSTYDMGR	1000,00	9
580	HPV	type 16	1	19	B*2702	GRNMIYSLF	200,00	9
581	HPV	type 16	1	19	B*2705	GRNMIYSLF	1000,00	9
582	HPV	type 16	1	19	B*5102	IGYNEHRATI	484,00	10
583	HPV	type 16	1	19	B*5103	IGYNEHRATI	132,00	10
584	HPV	type 16	1	19	Cw*0401	GYNEHRATIM	132,00	10
585	HPV	type 16	1	19	B*5102	RATIMAFVGV	100,00	10
586	HPV	type 16	1	19	B*5103	RATIMAFVGV	121,00	10
587	HPV	type 16	1	19	B*5102	MAFVGVTNYL	332,75	10
588	HPV	type 16	1	19	Cw*0401	AFVGVINYLL	240,00	10
589	HPV	type 16	1	19	B*2705	TNYLLLLLIL	100,00	10
590	HPV	type 16	1	19	A*0201	YLLLLLILHA	194,48	10
591	HPV	type 16	1	19	A*0201	LLLLLILHAV	1006,21	10
592	HPV	type 16	1	19	B*5102	HAVQICHYVL	165,00	10
593	HPV	type 16	1	19	B*2705	VQICHYVLPY	100,00	10
594	HPV	type 16	1	19	A*0205	YVLPYLLQKL	252,00	10
595	HPV	type 16	1	19	Cw*0301	YVLPYLLQKL	120,00	10



596	HPV	type 16 1	19	B*5102	LPYLLQKLHI	2420,00	10
597	HPV	type 16 1	19	B*5103	LPYLLQKLHI	159,72	10
598	HPV	type 16 1	19	A*0201	YLLQKLHIKI	177,57	10
599	HPV	type 16 1	19	B*2705	LRSTYDMGRN	200,00	10
600	HPV	type 16 1	19	B*2702	GRNMIYSLFF	200,00	10
601	HPV	type 16 1	19	B*2705	GRNMIYSLFF	1000,00	10
602	HPV	type 16 1	21	A*0201	VLFVVMFV	3609,23	9
603	HPV	type 16 1	21	Cw*0401	VVMFVCACM	120,00	9
604	HPV	type 16 1	21	Cw*0401	MFVCACMCL	220,00	9
605	HPV	type 16 1	21	A*0201	LVLFVVMFV	315,81	10
606	HPV	type 16 1	21	A*0201	VLFVVMFVC	170,91	10
607	HPV	type 16 1	21	A*0201	YMFVCACMCL	262,59	10
608	HPV	type 16 1	21	B*2705	YMFVCACMCL	250,00	10
609	HPV	type 16 1	22	B*5102	YGIINTCV	290,40	8
610	HPV	type 16 1	22	Cw*0301	TCVCVFKCL	120,00	9
611	HPV	type 16 1	22	B*2705	CNYCVMQHK	100,00	9
612	HPV	type 16 1	22	A*0201	CMYGIINTCV	160,74	10
613	HPV	type 16 1	22	B*5102	YGIINTCVCV	264,00	10
614	HPV	type 16 1	23	Cw*0401	LFGTKCVFL	200,00	9
615	HPV	type 16 1	23	A*0201	MLEGKTKCVFL	739,03	10
616	HPV	type 16 1	23	B*2705	MLEGKTKCVFL	150,00	10
617	HPV	type 16 1	24	B*5102	APTPYIPL	110,00	8
618	HPV	type 16 1	24	B*5102	YAPTPYIPL	110,00	9
619	HPV	type 16 1	24	B7	APTPYIPL	240,00	9
620	HPV	type 16 1	24	Cw*0401	APTPYIPL	192,00	9
621	HPV	type 16 1	24	B*5102	APTPYIPL	110,00	9
622	HPV	type 16 1	24	A*0201	LLGTYFWLV	1684,90	9
623	HPV	type 16 1	24	Cw*0401	YFWLVLTNL	400,00	9
624	HPV	type 16 1	24	A*0201	VLNLIAYL	459,40	9
625	HPV	type 16 1	24	Cw*0401	HYAPTPYIPL	240,00	10
626	HPV	type 16 1	24	A24	HYAPTPYIPL	240,00	10
627	HPV	type 16 1	24	B*5102	YAPTPYIPL	121,00	10
628	HPV	type 16 1	24	B*5102	IPLLGTYFWL	363,00	10
629	HPV	type 16 1	24	Cw*0301	IPLLGTYFWL	100,00	10
630	HPV	type 16 1	24	Cw*0401	TYFWLVLTNL	400,00	10
631	HPV	type 16 1	24	A24	TYFWLVLTNL	280,00	10
632	HPV	type 16 1	24	A*0201	LVLTLNLIAYL	148,73	10
633	HPV	type 16 1	24	A*0205	LVLTLNLIAYL	142,80	10
634	HPV	type 16 2	1	B*2705	LRREVYDF	1000,00	8
635	HPV	type 16 2	1	B*2705	RREVYDFA	600,00	8
636	HPV	type 16 2	1	B*5102	FAFRDLCI	2200,00	8
637	HPV	type 16 2	1	B*2705	FRDLCIVY	1000,00	8
638	HPV	type 16 2	1	B*2705	YRDGNFYA	200,00	8
639	HPV	type 16 2	1	B*5102	YAVCDKCL	300,00	8
640	HPV	type 16 2	1	B*2705	YRHYCYSL	2000,00	8
641	HPV	type 16 2	1	B*2705	QQYNKPLC	100,00	8
642	HPV	type 16 2	1	B*5102	KPLCDLLI	1200,00	8
643	HPV	type 16 2	1	B*2705	IRCINCQK	2000,00	8
644	HPV	type 16 2	1	B*2705	KQRHLDDK	180,00	8
645	HPV	type 16 2	1	B*2705	KORFHNIR	300,00	8
646	HPV	type 16 2	1	B*2705	IRGRWTGR	1000,00	8
647	HPV	type 16 2	1	B*2705	GRWTGRCM	3000,00	8
648	HPV	type 16 2	1	B*2705	GRCMSCCR	1000,00	8
649	HPV	type 16 2	1	B*2705	CRSSRTRR	300,00	8
650	HPV	type 16 2	1	B*5201	LQTTIHDI	300,00	9
651	HPV	type 16 2	1	B*3901	IHDIIIECV	135,00	9
652	HPV	type 16 2	1	B*2705	QQLLRREYV	100,00	9
653	HPV	type 16 2	1	B62	LLRREVYDF	120,00	9
654	HPV	type 16 2	1	B*2705	LRREVYDFA	200,00	9
655	HPV	type 16 2	1	B*2702	RREVYDFAF	600,00	9
656	HPV	type 16 2	1	B*2705	RREVYDFAF	3000,00	9
657	HPV	type 16 2	1	A24	VYDFAFRDL	240,00	9
658	HPV	type 16 2	1	Cw*0401	VYDFAFRDL	330,00	9
659	HPV	type 16 2	1	B*5103	FAFRDLCIV	132,00	9
660	HPV	type 16 2	1	B*5102	FAFRDLCIV	1100,00	9
661	HPV	type 16 2	1	B*2705	FRDLCIVYR	1000,00	9
662	HPV	type 16 2	1	B*2705	YRDGNFYAV	600,00	9
663	HPV	type 16 2	1	B*5102	NPYAVCDKC	110,00	9
664	HPV	type 16 2	1	A1	ISEYRHYCY	135,00	9
665	HPV	type 16 2	1	A24	EYRHYCYSL	200,00	9
666	HPV	type 16 2	1	Cw*0401	EYRHYCYSL	220,00	9
667	HPV	type 16 2	1	B*2702	YRHYCYSLY	200,00	9
668	HPV	type 16 2	1	B*2705	YRHYCYSLY	1000,00	9
669	HPV	type 16 2	1	A24	CYSLYGTTL	200,00	9
670	HPV	type 16 2	1	Cw*0401	CYSLYGTTL	200,00	9
671	HPV	type 16 2	1	B60	LEQQYNKPL	160,00	9
672	HPV	type 16 2	1	A24	QYNKPLCDL	300,00	9
673	HPV	type 16 2	1	Cw*0401	QYNKPLCDL	400,00	9
674	HPV	type 16 2	1	Cw*0401	CPEEKQRHL	105,60	9
675	HPV	type 16 2	1	B*2705	QRHLDDKQR	300,00	9
676	HPV	type 16 2	1	B*2705	QRFHNIRGR	1500,00	9
677	HPV	type 16 2	1	B*2705	IRGRWTGR	200,00	9
678	HPV	type 16 2	1	B*2705	GRWTGRCMS	1000,00	9
679	HPV	type 16 2	1	B*2705	GRCMSCCRS	200,00	9
680	HPV	type 16 2	1	B14	SRTTRETQL	300,00	9
681	HPV	type 16 2	1	B*2705	SRTTRETQL	2000,00	9
682	HPV	type 16 2	1	B*2705	LQTTIHDI	200,00	10
683	HPV	type 16 2	1	B60	LECVYCKQQL	176,00	10
684	HPV	type 16 2	1	A68.1	CVYCKQQLLR	200,00	10
685	HPV	type 16 2	1	B*2705	KQQLLRREVY	300,00	10

686	HPV	type 16 2	1	B*2702	LRREVYDFAF	200,00	10
687	HPV	type 16 2	1	B*2705	LRREVYDFAF	1000,00	10
688	HPV	type 16 2	1	B*2705	RREVYDFAFR	3000,00	10
689	HPV	type 16 2	1	Cw*0301	EVYDFAFRDL	100,00	10
690	HPV	type 16 2	1	B*2705	YRDGNPYAVC	200,00	10
691	HPV	type 16 2	1	B*5102	NPYAVCDKCL	550,00	10
692	HPV	type 16 2	1	B*2705	SEYRHYCYSL	150,00	10
693	HPV	type 16 2	1	B60	SEYRHYCYSL	320,00	10
694	HPV	type 16 2	1	B*2705	QQYNKPLCDL	1000,00	10
695	HPV	type 16 2	1	Cw*0401	QYNKPLCDLL	200,00	10
696	HPV	type 16 2	1	A24	QYNKPLCDLL	360,00	10
697	HPV	type 16 2	1	B*2705	IRCINCKQKL	600,00	10
698	HPV	type 16 2	1	B*2705	CQKPLCPFEK	200,00	10
699	HPV	type 16 2	1	B*2702	QRHLDDKKQRF	200,00	10
700	HPV	type 16 2	1	B*2705	QRHLDDKKQRF	1000,00	10
701	HPV	type 16 2	1	B*2702	QRFHNIRGRW	500,00	10
702	HPV	type 16 2	1	B*2705	QRFHNIRGRW	1000,00	10
703	HPV	type 16 2	1	B*2705	IRGRWTGRCM	180,00	10
704	HPV	type 16 2	1	B*2702	GRWTGRCMSC	100,00	10
705	HPV	type 16 2	1	B*2705	GRWTGRCMSC	1000,00	10
706	HPV	type 16 2	1	A68.1	WTGRCMSCCR	100,00	10
707	HPV	type 16 2	3	B*2705	KQNRTEPI	180,00	8
708	HPV	type 16 2	3	B*2705	NRTEPITI	600,00	8
709	HPV	type 16 2	3	B*2705	NRTEPITIL	2000,00	9
710	HPV	type 16 2	3	B*2705	KQNRTEPITI	180,00	10
711	HPV	type 16 2	4	B*2705	VRDVMDFG	1000,00	8
712	HPV	type 16 2	4	A68.1	QVPMGKRVR	200,00	9
713	HPV	type 16 2	4	B*2705	VRDVMDFGM	600,00	9
714	HPV	type 16 2	4	A*0201	ILQVPMGKRVR	118,24	10
715	HPV	type 16 2	4	B*5102	VPMGKRVRDV	242,00	10
716	HPV	type 16 2	4	B*2702	KRVRDVMDFG	600,00	10
717	HPV	type 16 2	4	B*2705	KRVRDVMDFG	3000,00	10
718	HPV	type 16 2	5	B*2705	HRKQNNIEM	600,00	9
719	HPV	type 16 2	5	B*2705	KQNNIEMQY	300,00	9
720	HPV	type 16 2	5	B*2705	KQNNIEMQYR	300,00	10
721	HPV	type 16 2	6	B*2705	ARGRGQGK	2000,00	8
722	HPV	type 16 2	6	B*2705	KRWRLFAN	3000,00	8
723	HPV	type 16 2	6	A68.1	DVVQIKFAR	1200,00	9
724	HPV	type 16 2	6	B*2705	ARGRGQGKR	1000,00	9
725	HPV	type 16 2	6	B*2705	GRGQGRWR	300,00	9
726	HPV	type 16 2	6	B62	GQGRWRRLF	160,00	9
727	HPV	type 16 2	6	B*2702	KRWRLFANV	300,00	9
728	HPV	type 16 2	6	B*2705	KRWRLFANV	9000,00	9
729	HPV	type 16 2	6	A*0201	ILFLKDVVQI	150,93	10
730	HPV	type 16 2	6	B62	FLKDVVQIKF	316,80	10
731	HPV	type 16 2	6	A68.1	VVQIKFARGR	200,00	10
732	HPV	type 16 2	6	B14	GRGQGRWR	100,00	10
733	HPV	type 16 2	6	B*2705	GRGQGRWR	2000,00	10
734	HPV	type 16 2	7	B*2705	YQRIKHYK	200,00	8
735	HPV	type 16 2	7	B14	QRIKHYKQL	180,00	9
736	HPV	type 16 2	7	B*2705	QRIKHYKQL	600,00	9
737	HPV	type 16 2	7	Cw*0301	QRIKHYKQL	240,00	9
738	HPV	type 16 2	7	B*2705	QRIKHYKQLN	200,00	10
739	HPV	type 16 2	8	B*2705	TQWTVLQS	100,00	8
740	HPV	type 16 2	8	Cw*0301	TKYPLLLKL	120,00	9
741	HPV	type 16 2	8	A*0201	KLLGSTWPT	723,78	9
742	HPV	type 16 2	8	B*5102	WPTTPPRPI	484,00	9
743	HPV	type 16 2	8	B*5102	WAPKKHRL	121,00	9
744	HPV	type 16 2	8	B*2705	TQWTVLQSS	100,00	9
745	HPV	type 16 2	8	B*5102	AATKYPLLLKL	110,00	10
746	HPV	type 16 2	8	A*0201	KLLGSTWPTT	164,06	10
747	HPV	type 16 2	8	B*2705	RLSSDQDQS	600,00	10
748	HPV	type 16 2	8	B*2705	TQWTVLQSSL	1000,00	10
749	HPV	type 16 2	8	B*5102	TAHTKDGLTV	121,00	10
750	HPV	type 16 2	8	B*5103	TAHTKDGLTV	121,00	10
751	HPV	type 16 2	9	B*2705	CRLHGIGQDI	600,00	10
752	HPV	type 16 2	11	B*5102	SAFRCFIV	550,00	8
753	HPV	type 16 2	11	B*2705	FRCFIVYI	600,00	8
754	HPV	type 16 2	11	A*0201	LLSVSTYT	257,80	9
755	HPV	type 16 2	11	Cw*0301	LSVSTYTS	100,00	9
756	HPV	type 16 2	11	A*0201	ILVLLWL	114,14	9
757	HPV	type 16 2	11	B*5103	AASAFRCFI	100,00	9
758	HPV	type 16 2	11	B*5102	AASAFRCFI	200,00	9
759	HPV	type 16 2	11	B*2705	FRCFIVYI	600,00	9
760	HPV	type 16 2	11	Cw*0301	YIIFVYIPL	100,00	9
761	HPV	type 16 2	11	Cw*0401	IFVYIPLFL	200,00	9
762	HPV	type 16 2	11	A*0201	FVYIPLFLI	179,26	9
763	HPV	type 16 2	11	Cw*0401	TYTSLIILVL	400,00	10
764	HPV	type 16 2	11	A24	TYTSLIILVL	280,00	10
765	HPV	type 16 2	11	B*5102	TAASAFRCFI	200,00	10
766	HPV	type 16 2	11	B*5103	TAASAFRCFI	110,00	10
767	HPV	type 16 2	11	B*5102	AASAFRCFIV	100,00	10
768	HPV	type 16 2	11	B*5103	AASAFRCFIV	110,00	10
769	HPV	type 16 2	11	B*5102	SAFRCFIVYI	1331,00	10
770	HPV	type 16 2	11	B*5103	SAFRCFIVYI	159,72	10
771	HPV	type 16 2	11	B*2702	FRCFIVYIIF	200,00	10
772	HPV	type 16 2	11	B*2705	FRCFIVYIIF	1000,00	10
773	HPV	type 16 2	11	Cw*0301	VYIIFVYIPL	100,00	10
774	HPV	type 16 2	11	Cw*0401	VYIIFVYIPL	200,00	10
775	HPV	type 16 2	11	A24	VYIIFVYIPL	420,00	10

776	HPV	type 16 2	11	A*0201	IIFVYIPLFL	101,62	10
777	HPV	type 16 2	11	Cw*0401	LFLIHTHARF	144,00	10
778	HPV	type 16 2	11	A*0201	FLIHTHARFL	108,09	10
779	HPV	type 16 2	12	B*2705	QRIPMYQC	200,00	8
780	HPV	type 16 2	12	B*2705	YQCCSKSR	100,00	8
781	HPV	type 16 2	12	B*2705	QRIPMYQCC	200,00	9
782	HPV	type 16 2	12	B*2705	QRIPMYQCCS	200,00	10
783	HPV	type 16 2	13	B*2705	RRETRRYL	6000,00	8
784	HPV	type 16 2	13	B*3501	SPRRHTRRY	120,00	9
785	HPV	type 16 2	13	B7	SPRRHTRRYL	1200,00	10
786	HPV	type 16 2	14	B*2705	MRKSLFS	200,00	8
787	HPV	type 16 2	15	Cw*0301	HSIVFYTAL	100,00	9
788	HPV	type 16 2	15	B*5102	TALCATTESL	199,65	10
789	HPV	type 16 2	2	B*2705	HQKRTAMF	100,00	8
790	HPV	type 16 2	2	B*3501	RPRKLPQL	120,00	8
791	HPV	type 16 2	2	B*5102	LPQLCTEL	133,10	8
792	HPV	type 16 2	2	B*2705	LRREVYDF	1000,00	8
793	HPV	type 16 2	2	B*2705	RREVYDFA	600,00	8
794	HPV	type 16 2	2	B*5102	FAFRDLCI	2200,00	8
795	HPV	type 16 2	2	B*2705	FRDLCTIVY	1000,00	8
796	HPV	type 16 2	2	B*2705	YRDGNPYA	200,00	8
797	HPV	type 16 2	2	B*5102	YAVCDKCL	300,00	8
798	HPV	type 16 2	2	B*2705	YRHYCYSL	2000,00	8
799	HPV	type 16 2	2	B*2705	QQYNKPLC	100,00	8
800	HPV	type 16 2	2	B*5102	KPLCDLLI	1200,00	8
801	HPV	type 16 2	2	B*2705	IRCINCQK	2000,00	8
802	HPV	type 16 2	2	B*2705	KQRHLDKK	180,00	8
803	HPV	type 16 2	2	B*2705	KQRFHNIR	300,00	8
804	HPV	type 16 2	2	B*2705	IRGRWTGR	1000,00	8
805	HPV	type 16 2	2	B*2705	GRWTGRCM	3000,00	8
806	HPV	type 16 2	2	B*2705	GRCMSCCR	1000,00	8
807	HPV	type 16 2	2	B*2705	CRSSRTRR	300,00	8
808	HPV	type 16 2	2	B*2705	AMFQDPQER	125,00	9
809	HPV	type 16 2	2	Cw*0401	DPQERPRKL	116,16	9
810	HPV	type 16 2	2	B*5102	DPQERPRKL	242,00	9
811	HPV	type 16 2	2	B14	ERPRKLPQL	360,00	9
812	HPV	type 16 2	2	B*2705	ERPRKLPQL	200,00	9
813	HPV	type 16 2	2	B*5201	LQTTIHDI	300,00	9
814	HPV	type 16 2	2	B*3901	IHDIIILECV	135,00	9
815	HPV	type 16 2	2	B*2705	QQLLRREVY	100,00	9
816	HPV	type 16 2	2	B62	LLRREVYDF	120,00	9
817	HPV	type 16 2	2	B*2705	LRREVYDFA	200,00	9
818	HPV	type 16 2	2	B*2702	RREVYDFAF	600,00	9
819	HPV	type 16 2	2	B*2705	RREVYDFAF	3000,00	9
820	HPV	type 16 2	2	A24	VYDFAFRDL	240,00	9
821	HPV	type 16 2	2	Cw*0401	VYDFAFRDL	330,00	9
822	HPV	type 16 2	2	B*5103	FAFRDLCTIV	132,00	9
823	HPV	type 16 2	2	B*5102	FAFRDLCTIV	1100,00	9
824	HPV	type 16 2	2	B*2705	FRDLCTIVYR	1000,00	9
825	HPV	type 16 2	2	B*2705	YRDGNPYAV	600,00	9
826	HPV	type 16 2	2	B*5102	NPYAVCDKC	110,00	9
827	HPV	type 16 2	2	A1	ISEYRHYCY	135,00	9
828	HPV	type 16 2	2	A24	EYRHYCYSL	200,00	9
829	HPV	type 16 2	2	Cw*0401	EYRHYCYSL	220,00	9
830	HPV	type 16 2	2	B*2702	YRHYCYSLY	200,00	9
831	HPV	type 16 2	2	B*2705	YRHYCYSLY	1000,00	9
832	HPV	type 16 2	2	A24	CYSLYGTTL	200,00	9
833	HPV	type 16 2	2	Cw*0401	CYSLYGTTL	200,00	9
834	HPV	type 16 2	2	B60	LEQYQNKPL	160,00	9
835	HPV	type 16 2	2	A24	QYNKPLCDL	300,00	9
836	HPV	type 16 2	2	Cw*0401	QYNKPLCDL	400,00	9
837	HPV	type 16 2	2	Cw*0401	CPEEKQRHL	105,60	9
838	HPV	type 16 2	2	B*2705	QRHLDKKQR	300,00	9
839	HPV	type 16 2	2	B*2705	QRFHNIIRGR	1500,00	9
840	HPV	type 16 2	2	B*2705	IRGRWTGR	200,00	9
841	HPV	type 16 2	2	B*2705	GRWTGRCMS	1000,00	9
842	HPV	type 16 2	2	B*2705	GRCMSCCRS	200,00	9
843	HPV	type 16 2	2	B14	SRTRETQL	300,00	9
844	HPV	type 16 2	2	B*2705	SRTRETQL	2000,00	9
845	HPV	type 16 2	2	B*2705	FQDPQERPRK	200,00	10
846	HPV	type 16 2	2	B60	QERPRKLPQL	176,00	10
847	HPV	type 16 2	2	Cw*0301	RKLPQLCTEL	100,00	10
848	HPV	type 16 2	2	B*2705	LQTTIHDIIL	200,00	10
849	HPV	type 16 2	2	B60	LECVYCKQQL	176,00	10
850	HPV	type 16 2	2	A68.1	CVYCKQQLLR	200,00	10
851	HPV	type 16 2	2	B*2705	KQQLLRREVY	300,00	10
852	HPV	type 16 2	2	B*2702	LRREVYDFAF	200,00	10
853	HPV	type 16 2	2	B*2705	LRREVYDFAF	1000,00	10
854	HPV	type 16 2	2	B*2705	RREVYDFAFR	3000,00	10
855	HPV	type 16 2	2	Cw*0301	EVYDFAFRDL	100,00	10
856	HPV	type 16 2	2	B*2705	YRDGNPYAVC	200,00	10
857	HPV	type 16 2	2	B*5102	NPYAVCDKCL	550,00	10
858	HPV	type 16 2	2	B*2705	SEYRHYCYSL	150,00	10
859	HPV	type 16 2	2	B60	SEYRHYCYSL	320,00	10
860	HPV	type 16 2	2	B*2705	QQYNKPLCDL	1000,00	10
861	HPV	type 16 2	2	Cw*0401	QYNKPLCDLL	200,00	10
862	HPV	type 16 2	2	A24	QYNKPLCDLL	360,00	10
863	HPV	type 16 2	2	B*2705	IRCINCQKPL	600,00	10
864	HPV	type 16 2	2	B*2705	CQKPLCPEEK	200,00	10
865	HPV	type 16 2	2	B*2702	QRHLDKKQRF	200,00	10

866	HPV	type 16 2	2	B*2705	QRHLDDKQRF	1000,00	10
867	HPV	type 16 2	2	B*2702	QRPHNIRGRW	500,00	10
868	HPV	type 16 2	2	B*2705	QRPHNIRGRW	1000,00	10
869	HPV	type 16 2	2	B*2705	IRGRWTGRM	180,00	10
870	HPV	type 16 2	2	B*2702	GRWTGRCMSC	100,00	10
871	HPV	type 16 2	2	B*2705	GRWTGRCMSC	1000,00	10
872	HPV	type 16 2	2	A68.1	WTGRCMSCCR	100,00	10
873	HPV	type 16 2	5	B*2705	VQLDKQNR	100,00	8
874	HPV	type 16 2	5	B*2705	KQNRTEPI	180,00	8
875	HPV	type 16 2	5	B*2705	NRTEPITI	600,00	8
876	HPV	type 16 2	5	A68.1	MVQLDKQNR	200,00	9
877	HPV	type 16 2	5	B*2705	NRTEPITIL	2000,00	9
878	HPV	type 16 2	5	B*2705	KQNRTEPITI	180,00	10
879	HPV	type 16 2	6	B*2705	VRDVMDF	1000,00	8
880	HPV	type 16 2	6	B*2705	VRDVMDFM	600,00	9
881	HPV	type 16 2	6	B*2702	KRVRDVMDF	600,00	10
882	HPV	type 16 2	6	B*2705	KRVRDVMDF	3000,00	10
883	HPV	type 16 2	7	B*2705	TRTKMTVI	600,00	8
884	HPV	type 16 2	7	B*2705	KMTVIQVK	150,00	8
885	HPV	type 16 2	7	Cw*0401	LYQMTTRTKM	132,00	9
886	HPV	type 16 2	7	A*0201	YQMTTRTKMTV	120,02	10
887	HPV	type 16 2	7	B*2705	TRTKMTVIQV	600,00	10
888	HPV	type 16 2	8	B*2705	MRCLLHRK	600,00	8
889	HPV	type 16 2	8	B*2705	HRKQNNIEM	600,00	9
890	HPV	type 16 2	8	B*2705	KQNNIEMQY	300,00	9
891	HPV	type 16 2	8	B*2705	KQNNIEMQYR	300,00	10
892	HPV	type 16 2	10	B*5102	NGCVTISKI	193,60	9
893	HPV	type 16 2	11	A68.1	CVSNVYDDR	200,00	9
894	HPV	type 16 2	11	A68.1	NVYDDRASK	120,00	9
895	HPV	type 16 2	13	B*5102	MPSIINYI	440,00	8
896	HPV	type 16 2	15	B*3901	GHYKTLAL	270,00	8
897	HPV	type 16 2	16	B*2705	IQWKCSLM	300,00	8
898	HPV	type 16 2	16	B*5201	ETYAIQCII	120,00	9
899	HPV	type 16 2	16	B*2705	IQTGHYIF	100,00	9
900	HPV	type 16 2	16	B62	IQTGHYIF	124,80	9
901	HPV	type 16 2	16	B*2705	IQWKCSLMET	100,00	10
902	HPV	type 16 2	17	A24	EYEHILCSL	420,00	9
903	HPV	type 16 2	17	Cw*0401	EYEHILCSL	440,00	9
904	HPV	type 16 2	17	A3	KMQKNIVK	180,00	9
905	HPV	type 16 2	17	B*2705	KMQKNIVK	150,00	9
906	HPV	type 16 2	17	Cw*0401	MFMYEYEHIL	200,00	10
907	HPV	type 16 2	17	B*2705	KEYEHILCSL	450,00	10
908	HPV	type 16 2	17	B60	KEYEHILCSL	176,00	10
909	HPV	type 16 2	17	A*0201	KMQKNIVKI	224,42	10
910	HPV	type 16 2	17	B*2705	MQKNIVKIKY	100,00	10
911	HPV	type 16 2	17	B62	MQKNIVKIKY	288,00	10
912	HPV	type 16 2	18	B*2705	TNFCCLKK	100,00	8
913	HPV	type 16 2	18	B*2705	YQKLLQCL	200,00	8
914	HPV	type 16 2	18	B8	CLKLKYQKL	160,00	9
915	HPV	type 16 2	18	A24	KYQKLLQCL	864,00	9
916	HPV	type 16 2	18	Cw*0401	KYQKLLQCL	400,00	9
917	HPV	type 16 2	18	B*2705	YQKLLQCLL	200,00	9
918	HPV	type 16 2	18	A*0201	KLLQCLLDL	636,28	9
919	HPV	type 16 2	18	A*0205	KLLQCLLDL	126,00	9
920	HPV	type 16 2	18	B*2705	LQCLLDLCL	200,00	9
921	HPV	type 16 2	18	A68.1	NVTNFCCLKK	120,00	10
922	HPV	type 16 2	18	Cw*0301	FCLKLKYQKL	120,00	10
923	HPV	type 16 2	18	Cw*0401	KYQKLLQCLL	200,00	10
924	HPV	type 16 2	18	A24	KYQKLLQCLL	720,00	10
925	HPV	type 16 2	18	B*2705	LQCLLDLCLY	100,00	10
926	HPV	type 16 2	18	A3	CLLDLCLYDK	135,00	10
927	HPV	type 16 2	19	B*2705	MRHKRSK	2000,00	8
928	HPV	type 16 2	19	B*2705	KRSKRTRK	6000,00	8
929	HPV	type 16 2	19	B*2705	KRTKRASA	600,00	8
930	HPV	type 16 2	19	B*2705	KRASATQL	6000,00	8
931	HPV	type 16 2	19	B*2705	TQLYKTCK	200,00	8
932	HPV	type 16 2	19	B*2705	LQYSGMGV	300,00	8
933	HPV	type 16 2	19	B*2705	GRTGYIPL	2000,00	8
934	HPV	type 16 2	19	B*5102	GPSDPSIV	200,00	8
935	HPV	type 16 2	19	B*5102	DPSIVSLV	220,00	8
936	HPV	type 16 2	19	B*5102	DAGAPTSV	110,00	8
937	HPV	type 16 2	19	B*5102	APTSVPSI	440,00	8
938	HPV	type 16 2	19	B*5102	VPSIPPDV	200,00	8
939	HPV	type 16 2	19	B*5102	IPMDTFIV	220,00	8
940	HPV	type 16 2	19	B*5102	RPVARLGL	300,00	8
941	HPV	type 16 2	19	B*2705	ARLGLYSR	1000,00	8
942	HPV	type 16 2	19	B*2705	SRTTQQVK	2000,00	8
943	HPV	type 16 2	19	B*5102	DPDFLDIV	100,00	8
944	HPV	type 16 2	19	B*5102	VALHRPAL	165,00	8
945	HPV	type 16 2	19	B*2705	HRPALTSR	1000,00	8
946	HPV	type 16 2	19	B*2705	SRRTGIRY	300,00	8
947	HPV	type 16 2	19	B*2705	RRTGIRYS	600,00	8
948	HPV	type 16 2	19	B*5102	TGIRYSRI	290,40	8
949	HPV	type 16 2	19	B*2705	IRYSRIGN	1000,00	8
950	HPV	type 16 2	19	B*2705	SRIGNKQT	200,00	8
951	HPV	type 16 2	19	B*5102	DPAEEIEL	133,10	8
952	HPV	type 16 2	19	B*5102	HAASTPSI	220,00	8
953	HPV	type 16 2	19	B*5102	GAYNIPLV	550,00	8
954	HPV	type 16 2	19	B*5102	GPDIPINI	220,00	8
955	HPV	type 16 2	19	B*5102	QAPSLIPI	220,00	8

956	HPV	type 16 2	19	B*5102	APSLIPIV	220,00	8
957	HPV	type 16 2	19	B*2705	LRKRRKRL	600,00	8
958	HPV	type 16 2	19	B*2705	KRRKRLPY	3000,00	8
959	HPV	type 16 2	19	B*2705	RRKRLPYF	3000,00	8
960	HPV	type 16 2	19	B*2705	KRLPYFFS	600,00	8
961	HPV	type 16 2	19	B*5102	LPYFFSDV	1000,00	8
962	HPV	type 16 2	19	B*2705	MRHKRSKR	1000,00	9
963	HPV	type 16 2	19	B*2705	KRSKRTRK	3000,00	9
964	HPV	type 16 2	19	B*2705	KRTKRASAT	600,00	9
965	HPV	type 16 2	19	B*2702	KRASATQLY	600,00	9
966	HPV	type 16 2	19	B*2705	KRASATQLY	3000,00	9
967	HPV	type 16 2	19	B*5103	QAGTCPPDI	110,00	9
968	HPV	type 16 2	19	B*5102	QAGTCPPDI	220,00	9
969	HPV	type 16 2	19	B*5102	CPPDIIPKV	440,00	9
970	HPV	type 16 2	19	B*5102	IPKVEGKTI	242,00	9
971	HPV	type 16 2	19	A*0201	LLQYSGMGV	118,24	9
972	HPV	type 16 2	19	B*2702	LQYSGMGVF	100,00	9
973	HPV	type 16 2	19	B*2705	LQYSGMGVF	500,00	9
974	HPV	type 16 2	19	B*5201	LQYSGMGVF	375,00	9
975	HPV	type 16 2	19	B62	LQYSGMGVF	105,60	9
976	HPV	type 16 2	19	A24	QYSGMGVFF	100,00	9
977	HPV	type 16 2	19	Cw*0401	QYSGMGVFF	110,00	9
978	HPV	type 16 2	19	A68.1	GTSGTGGR	100,00	9
979	HPV	type 16 2	19	B*2705	TRPPTATDT	200,00	9
980	HPV	type 16 2	19	B*5102	RPPPTATDTL	133,10	9
981	HPV	type 16 2	19	B*5103	TATDTLAPV	110,00	9
982	HPV	type 16 2	19	B*5102	TATDTLAPV	110,00	9
983	HPV	type 16 2	19	B*5102	APVRPPLTV	726,00	9
984	HPV	type 16 2	19	B*5102	RPPLTVDPV	242,00	9
985	HPV	type 16 2	19	B*5201	VGPSDPSIV	150,00	9
986	HPV	type 16 2	19	A*0201	SLVEETSFI	235,26	9
987	HPV	type 16 2	19	B*5103	GAPTSVPSI	110,00	9
988	HPV	type 16 2	19	B*5102	GAPTSVPSI	220,00	9
989	HPV	type 16 2	19	A*0201	AILDINNIV	145,08	9
990	HPV	type 16 2	19	B*5102	NETFTDPSV	220,00	9
991	HPV	type 16 2	19	B60	AETGGHFTL	160,00	9
992	HPV	type 16 2	19	B*5102	TPIFGSRPV	726,00	9
993	HPV	type 16 2	19	B14	SRPVARLGL	200,00	9
994	HPV	type 16 2	19	B*2705	SRPVARLGL	2000,00	9
995	HPV	type 16 2	19	B*2705	ARLGLYSRT	200,00	9
996	HPV	type 16 2	19	B*2705	SRTTQQVKV	600,00	9
997	HPV	type 16 2	19	Cw*0401	AFVTTPTKL	264,00	9
998	HPV	type 16 2	19	B*5102	NPAYEGIDV	200,00	9
999	HPV	type 16 2	19	B*5102	APDDPFLDI	200,00	9
1000	HPV	type 16 2	19	B*2705	HRPALTSTR	1000,00	9
1001	HPV	type 16 2	19	B*2705	RRTGIRYSR	3000,00	9
1002	HPV	type 16 2	19	B*2705	IRYSRIGNK	10000,00	9
1003	HPV	type 16 2	19	B*2705	SRIGNKQTL	2000,00	9
1004	HPV	type 16 2	19	B*2705	LRTSGKSI	180,00	9
1005	HPV	type 16 2	19	B*2705	TRSGKSIGA	200,00	9
1006	HPV	type 16 2	19	Cw*0301	AKVHYYYDL	100,00	9
1007	HPV	type 16 2	19	B*2705	LQTTTPSTY	100,00	9
1008	HPV	type 16 2	19	B*5102	SPTSINNGL	110,00	9
1009	HPV	type 16 2	19	A24	LYDIYADDF	100,00	9
1010	HPV	type 16 2	19	Cw*0401	LYDIYADDF	150,00	9
1011	HPV	type 16 2	19	B*3701	YDIYADDFI	200,00	9
1012	HPV	type 16 2	19	B7	VPSVPSTSL	120,00	9
1013	HPV	type 16 2	19	B*5102	VPSVPSTSL	100,00	9
1014	HEV	type 16 2	19	B*5102	LPFGGAYNI	2420,00	9
1015	HPV	type 16 2	19	B*5102	IPLVSGPDI	1200,00	9
1016	HPV	type 16 2	19	B*5103	QAPSLIPIV	110,00	9
1017	HPV	type 16 2	19	B*5102	QAPSLIPIV	110,00	9
1018	HPV	type 16 2	19	B*5102	VPGSPQYTI	484,00	9
1019	HPV	type 16 2	19	Cw*0401	FYLHPSYYM	100,00	9
1020	HPV	type 16 2	19	A*0201	YLHPSYYML	147,40	9
1021	HPV	type 16 2	19	B8	MLRKRKRRL	160,00	9
1022	HPV	type 16 2	19	B*2702	KRRKRLPYF	600,00	9
1023	HPV	type 16 2	19	B*2705	KRRKRLPYF	3000,00	9
1024	HPV	type 16 2	19	B*2702	RRKRLPYFF	600,00	9
1025	HPV	type 16 2	19	B*2705	RRKRLPYFF	3000,00	9
1026	HPV	type 16 2	19	A*0201	RLPYFFSDV	502,17	9
1027	HPV	type 16 2	19	B*2705	KRSKRTRKA	180,00	10
1028	HPV	type 16 2	19	B*2705	KRASATQLYK	6000,00	10
1029	HPV	type 16 2	19	B*2705	KQAGTCPPDI	180,00	10
1030	HPV	type 16 2	19	B*5102	QAGTCPPDII	220,00	10
1031	HPV	type 16 2	19	B*5103	QAGTCPPDII	110,00	10
1032	HPV	type 16 2	19	B*2702	LQYSGMGVFF	100,00	10
1033	HPV	type 16 2	19	B*2705	LQYSGMGVFF	500,00	10
1034	HPV	type 16 2	19	B*5201	LQYSGMGVFF	168,75	10
1035	HPV	type 16 2	19	B62	LQYSGMGVFF	115,20	10
1036	HPV	type 16 2	19	Cw*0301	GSMGVFFGGL	100,00	10
1037	HPV	type 16 2	19	B*5102	MGVFFGGLGI	264,00	10
1038	HPV	type 16 2	19	B*5102	SGTGGRTGYI	106,48	10
1039	HPV	type 16 2	19	B*2705	GRTGYIPLGT	200,00	10
1040	HPV	type 16 2	19	A68.1	RTGYIPLGTR	100,00	10
1041	HPV	type 16 2	19	B*2705	TRPPTATDTL	2000,00	10
1042	HPV	type 16 2	19	B*5102	LAPVRPPLTV	110,00	10
1043	HPV	type 16 2	19	B*5103	LAPVRPPLTV	110,00	10
1044	HPV	type 16 2	19	B*2705	VRPPLTVDPV	600,00	10
1045	HPV	type 16 2	19	B*5102	DFVGSPDPSI	1320,00	10

1046	HPV	type 16 2	19	B*5102	GPSDFSIIVSL	110,00	10
1047	HPV	type 16 2	19	Cw*0401	GPSDFSIIVSL	211,20	10
1048	HPV	type 16 2	19	B*5102	IPPDVSGFSI	400,00	10
1049	HPV	type 16 2	19	B*5102	NPTFTDPSVL	100,00	10
1050	HPV	type 16 2	19	Cw*0401	NYEETIPMDTF	144,00	10
1051	HPV	type 16 2	19	A24	NYEETIPMDTF	180,00	10
1052	HPV	type 16 2	19	B7	IPGSRFPVARL	120,00	10
1053	HPV	type 16 2	19	B*5102	IPGSRFPVARL	200,00	10
1054	HPV	type 16 2	19	Cw*0401	IPGSRFPVARL	192,00	10
1055	HPV	type 16 2	19	B*2702	SRFPVARLGLY	200,00	10
1056	HPV	type 16 2	19	B*2705	SRFPVARLGLY	1000,00	10
1057	HPV	type 16 2	19	A*0201	GLYSRTTQQV	222,57	10
1058	HPV	type 16 2	19	B*2705	SRTTQQVKVV	180,00	10
1059	HPV	type 16 2	19	B*2705	QQVKVVDPAF	100,00	10
1060	HPV	type 16 2	19	B60	YEGIDVDNLT	176,00	10
1061	HPV	type 16 2	19	B*5102	IAPDPDFLDI	200,00	10
1062	HPV	type 16 2	19	B*5103	IAPDPDFLDI	100,00	10
1063	HPV	type 16 2	19	B*5102	APDPDFLDIV	100,00	10
1064	HPV	type 16 2	19	B*5201	APDPDFLDIV	198,00	10
1065	HPV	type 16 2	19	Cw*0401	DPDFLDIVL	240,00	10
1066	HPV	type 16 2	19	B14	DIVLHRRPAL	135,00	10
1067	HPV	type 16 2	19	B*2705	SRRTGIRYSR	1000,00	10
1068	HPV	type 16 2	19	B*2702	RRTGIRYSRI	180,00	10
1069	HPV	type 16 2	19	B*2705	RRTGIRYSRI	1800,00	10
1070	HPV	type 16 2	19	B*2705	IRYSRIGNKQ	100,00	10
1071	HPV	type 16 2	19	B*2705	SRIGNKQTLR	1000,00	10
1072	HPV	type 16 2	19	B*2705	KQTLRTRSGK	600,00	10
1073	HPV	type 16 2	19	B*2705	TRSGKSIGAK	2000,00	10
1074	HPV	type 16 2	19	A*0201	FITDTSTTPV	180,37	10
1075	HPV	type 16 2	19	B*5102	VPSTSLSGYI	484,00	10
1076	HPV	type 16 2	19	B*5102	SGYIPANTTI	484,00	10
1077	HPV	type 16 2	19	B*5103	SGYIPANTTI	132,00	10
1078	HPV	type 16 2	19	B*5201	DQAPSLPIV	240,00	10
1079	HPV	type 16 2	19	B*5102	VPSPQYTI	440,00	10
1080	HPV	type 16 2	19	A*0201	IIADAGDFYL	653,09	10
1081	HPV	type 16 2	19	Cw*0401	DFYLHPSYYM	100,00	10
1082	HPV	type 16 2	19	Cw*0301	FYLHPSYYML	100,00	10
1083	HPV	type 16 2	19	Cw*0401	FYLHPSYYML	200,00	10
1084	HPV	type 16 2	19	A24	FYLHPSYYML	300,00	10
1085	HPV	type 16 2	19	A*0201	YMLRKRKRRL	262,59	10
1086	HPV	type 16 2	19	B14	YMLRKRKRRL	250,00	10
1087	HPV	type 16 2	19	B*2702	LRKRKRRLPY	200,00	10
1088	HPV	type 16 2	19	B*2705	LRKRKRRLPY	1000,00	10
1089	HPV	type 16 2	19	B*2702	KRKRRLPYFF	600,00	10
1090	HPV	type 16 2	19	B*2705	KRKRRLPYFF	3000,00	10
1091	HPV	type 16 2	19	B*2705	RRKRRLPYFFS	600,00	10
1092	HPV	type 16 2	19	B*2705	KRLPYFFSDV	1800,00	10
1093	HPV	type 16 2	19	B*5102	LPYFFSDVSL	500,00	10
1094	HPV	type 16 2	20	B*5102	YGLQTNIT	638,88	8
1095	HPV	type 16 2	20	B*2705	LQINTIVF	100,00	8
1096	HPV	type 16 2	20	B*2705	YRGTLGQR	1000,00	8
1097	HPV	type 16 2	20	B*5102	RGTLGQRI	117,13	8
1098	HPV	type 16 2	20	B*2705	QRIPMYQC	200,00	8
1099	HPV	type 16 2	20	B*2705	YQCCSKSR	100,00	8
1100	HPV	type 16 2	20	B*5201	YGLQTNITIV	165,00	9
1101	HPV	type 16 2	20	B*5102	YGLQTNITIV	319,44	9
1102	HPV	type 16 2	20	B*5801	QINTIVFNW	158,40	9
1103	HPV	type 16 2	20	B*2705	LQTTYRGTL	200,00	9
1104	HPV	type 16 2	20	B*2705	YRGTLGQRI	600,00	9
1105	HPV	type 16 2	20	B*2705	QRIPMYQCC	200,00	9
1106	HPV	type 16 2	20	B*2705	QRIPMYQCCS	200,00	10
1107	HPV	type 16 2	22	B*2705	MRAKSLFS	200,00	8
1108	HPV	type 16 2	23	B*2705	MRQLTYR	1000,00	8
1109	HPV	type 16 2	23	B*2705	MRQLTYRC	200,00	9
1110	HPV	type 16 3	1	B*2705	LQCFRTHR	100,00	8
1111	HPV	type 16 3	1	B*2705	HRSDPESY	1000,00	8
1112	HPV	type 16 3	1	B*5102	YAQSCCKQL	110,00	8
1113	HPV	type 16 3	1	B*2705	AQSCCKQLY	100,00	8
1114	HPV	type 16 3	1	B*2705	HRSDPESYH	200,00	9
1115	HPV	type 16 3	1	A24	SYAQSCCKQL	200,00	9
1116	HPV	type 16 3	1	Cw*0401	SYAQSCCKQL	200,00	9
1117	HPV	type 16 3	1	B*2705	FRTHRSDPES	200,00	10
1118	HPV	type 16 3	1	B*2705	HRSDPESYHS	200,00	10
1119	HPV	type 16 3	1	A1	RSDPESYHSY	375,00	10
1120	HPV	type 16 3	4	B*2705	LRSTAAAL	2000,00	8
1121	HPV	type 16 3	4	B*2705	QRQTVLQH	200,00	8
1122	HPV	type 16 3	4	B*2705	SQMVQWAY	100,00	8
1123	HPV	type 16 3	4	B*5102	WAYDNDIV	550,00	8
1124	HPV	type 16 3	4	B*5102	IAYKYAQL	302,50	8
1125	HPV	type 16 3	4	B*2705	KRAEKKQM	1800,00	8
1126	HPV	type 16 3	4	B*2705	KQIVMFLR	300,00	8
1127	HPV	type 16 3	4	B*2705	LRYQGVVEF	5000,00	8
1128	HPV	type 16 3	4	B*2705	KRFLQGIP	300,00	8
1129	HPV	type 16 3	4	B*2705	LQGSVICF	100,00	8
1130	HPV	type 16 3	4	B*3901	SHFWLQPL	180,00	8
1131	HPV	type 16 3	4	B*2705	LQPLADAK	200,00	8
1132	HPV	type 16 3	4	B*5102	QPLADAKI	1320,00	8
1133	HPV	type 16 3	4	B*2705	WNYIDNLI	100,00	8
1134	HPV	type 16 3	4	B*2705	LRNALDGN	200,00	8
1135	HPV	type 16 3	4	B*5102	NALDGNLV	363,00	8

1136	HPV	type 16 3	4	B*2705	HRPLVQLK	2000,00	8
1137	HPV	type 16 3	4	B*2705	VQLKCPPL	200,00	8
1138	HPV	type 16 3	4	B*2705	SRWPYLHN	1000,00	8
1139	HPV	type 16 3	4	B*5102	WPYLHNRL	665,50	8
1140	HPV	type 16 3	4	B*2705	NRLVVFTE	1000,00	8
1141	HPV	type 16 3	4	B*2705	SRTWSRLS	200,00	8
1142	HPV	type 16 3	4	B*2705	RTWSRLSL	150,00	8
1143	HPV	type 16 3	4	B*2702	LRSTAAALY	200,00	9
1144	HPV	type 16 3	4	B*2705	LRSTAAALY	1000,00	9
1145	HPV	type 16 3	4	B*5801	RSTAAALYW	264,00	9
1146	HPV	type 16 3	4	B*5102	TGISENISEV	145,20	9
1147	HPV	type 16 3	4	B*2705	QRQTVLQHS	200,00	9
1148	HPV	type 16 3	4	B*2705	RQTVLQHSF	300,00	9
1149	HPV	type 16 3	4	B62	RQTVLQHSF	160,00	9
1150	HPV	type 16 3	4	Cw*0401	SFNDCTFEL	240,00	9
1151	HPV	type 16 3	4	B*2705	VQWAYDNDI	300,00	9
1152	HPV	type 16 3	4	A1	IVDDSEIAY	125,00	9
1153	HPV	type 16 3	4	A68.1	ATMCRHYKR	100,00	9
1154	HPV	type 16 3	4	B*2705	CRHYKRAEK	2000,00	9
1155	HPV	type 16 3	4	B*2705	KRAEKKQMS	600,00	9
1156	HPV	type 16 3	4	B*2705	KQMSMSQWI	180,00	9
1157	HPV	type 16 3	4	A68.1	RVDDGGDNK	120,00	9
1158	HPV	type 16 3	4	B*2705	KQIVMFLRY	300,00	9
1159	HPV	type 16 3	4	A*0201	VMFLRYQGV	473,94	9
1160	HPV	type 16 3	4	B62	FLRYQGVFE	144,00	9
1161	HPV	type 16 3	4	B*2702	LRYQGVFEFM	100,00	9
1162	HPV	type 16 3	4	B*2705	LRYQGVFEFM	3000,00	9
1163	HPV	type 16 3	4	B*2705	YQGVFEFMSF	100,00	9
1164	HPV	type 16 3	4	B62	YQGVFEFMSF	160,00	9
1165	HPV	type 16 3	4	Cw*0401	EFMSFLTAL	400,00	9
1166	HPV	type 16 3	4	Cw*0401	SFLTALKRF	220,00	9
1167	HPV	type 16 3	4	A*0201	FLTALKRFL	108,09	9
1168	HPV	type 16 3	4	B*2705	KRFLQGIPK	30000,00	9
1169	HPV	type 16 3	4	B*5102	QGIPKNCI	240,00	9
1170	HPV	type 16 3	4	A3	SLFGMSLMK	300,00	9
1171	HPV	type 16 3	4	B*2705	SLFGMSLMK	150,00	9
1172	HPV	type 16 3	4	Cw*0401	LFGMSLMKF	220,00	9
1173	HPV	type 16 3	4	A*0201	LQGSVICFV	151,65	9
1174	HPV	type 16 3	4	A68.1	SVICFVNSK	240,00	9
1175	HPV	type 16 3	4	Cw*0401	CFVNSKSHF	110,00	9
1176	HPV	type 16 3	4	B*2705	LRNALDGNL	2000,00	9
1177	HPV	type 16 3	4	A68.1	LVSMDVKHR	300,00	9
1178	HPV	type 16 3	4	B*2705	HRPLVQLKC	200,00	9
1179	HPV	type 16 3	4	B*2705	VQLKCPPLL	200,00	9
1180	HPV	type 16 3	4	B*5102	PPLLTISNI	145,20	9
1181	HPV	type 16 3	4	B*2705	SRWPYLHNR	5000,00	9
1182	HPV	type 16 3	4	B*5103	WPYLHNRLV	132,00	9
1183	HPV	type 16 3	4	B*5102	WPYLHNRLV	1331,00	9
1184	HPV	type 16 3	4	B*2705	KNWKSFFSR	150,00	9
1185	HPV	type 16 3	4	Cw*0401	FFSRTWSRL	240,00	9
1186	HPV	type 16 3	4	B14	SRTWSRLSL	100,00	9
1187	HPV	type 16 3	4	B*2705	SRTWSRLSL	2000,00	9
1188	HPV	type 16 3	4	B62	KLRSTAAALY	120,00	10
1189	HPV	type 16 3	4	B*2702	LRSTAAALYW	100,00	10
1190	HPV	type 16 3	4	B*2705	LRSTAAALYW	200,00	10
1191	HPV	type 16 3	4	B*5102	AALYWYKTGI	600,00	10
1192	HPV	type 16 3	4	B*5103	AALYWYKTGI	132,00	10
1193	HPV	type 16 3	4	B*5102	TPEWIQRQTV	133,10	10
1194	HPV	type 16 3	4	B*2702	QRQTVLQHSF	200,00	10
1195	HPV	type 16 3	4	B*2705	QRQTVLQHSF	1000,00	10
1196	HPV	type 16 3	4	B*2705	LQHSFNDCTF	100,00	10
1197	HPV	type 16 3	4	B*2705	VQWAYDNDIV	300,00	10
1198	HPV	type 16 3	4	B*5201	VQWAYDNDIV	990,00	10
1199	HPV	type 16 3	4	A68.1	IVDDSEIAYK	120,00	10
1200	HPV	type 16 3	4	B60	SEIAYKYAQL	352,00	10
1201	HPV	type 16 3	4	Cw*0301	SEIAYKYAQL	100,00	10
1202	HPV	type 16 3	4	A68.1	IVKDCATMCR	200,00	10
1203	HPV	type 16 3	4	B*2705	CRHYKRAEKK	2000,00	10
1204	HPV	type 16 3	4	Cw*0401	HYKRAEKKQM	100,00	10
1205	HPV	type 16 3	4	B*2705	KRAEKKQMSM	1800,00	10
1206	HPV	type 16 3	4	B*2705	KQMSMSQWIK	600,00	10
1207	HPV	type 16 3	4	B*2705	SQWIKYRCDR	500,00	10
1208	HPV	type 16 3	4	B*2705	DRVDDGGDNK	200,00	10
1209	HPV	type 16 3	4	B*3701	GDWKQIVMFL	300,00	10
1210	HPV	type 16 3	4	Cw*0401	MFLRYQGVFE	100,00	10
1211	HPV	type 16 3	4	B*2705	LRYQGVFEFMS	1000,00	10
1212	HPV	type 16 3	4	Cw*0401	RYQGVFEFMSF	110,00	10
1213	HPV	type 16 3	4	A24	RYQGVFEFMSF	360,00	10
1214	HPV	type 16 3	4	A*0201	YQGVFEFMSFL	478,93	10
1215	HPV	type 16 3	4	B*2705	YQGVFEFMSFL	200,00	10
1216	HPV	type 16 3	4	B*2705	VEFMSFLTAL	150,00	10
1217	HPV	type 16 3	4	B60	VEFMSFLTAL	150,00	10
1218	HPV	type 16 3	4	Cw*0401	SFLTALKRFL	200,00	10
1219	HPV	type 16 3	4	B*5102	TALKRFLQGI	726,00	10
1220	HPV	type 16 3	4	B*5103	TALKRFLQGI	132,00	10
1221	HPV	type 16 3	4	B*2705	KRFLQGIPKK	30000,00	10
1222	HPV	type 16 3	4	Cw*0301	QGIPKNCIL	100,00	10
1223	HPV	type 16 3	4	B*3501	IPKNCILLY	120,00	10
1224	HPV	type 16 3	4	A3	LLYGAANTGK	150,00	10
1225	HPV	type 16 3	4	B*2705	LLYGAANTGK	150,00	10

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1226	HPV	type 16 3	4	Cw*0401	LFGMSLMKFL	240,00	10
1227	HPV	type 16 3	4	Cw*0401	KFLQGSVICF	200,00	10
1228	HPV	type 16 3	4	A*0201	FLQGSVICFV	4047,23	10
1229	HPV	type 16 3	4	A*0201	FNVSKSHFWL	274,29	10
1230	HPV	type 16 3	4	B*5102	DATVPCWNYI	220,00	10
1231	HPV	type 16 3	4	B*5103	DATVPCWNYI	121,00	10
1232	HPV	type 16 3	4	B*2705	LRNALDGNLV	600,00	10
1233	HPV	type 16 3	4	B*5102	CPPLLTISNI	484,00	10
1234	HPV	type 16 3	4	B*2702	SRWPYLHNRL	300,00	10
1235	HPV	type 16 3	4	B*2705	SRWPYLHNRL	10000,00	10
1236	HPV	type 16 3	4	B*5102	WPYLHNRLVV	1210,00	10
1237	HPV	type 16 3	4	B*5103	WPYLHNRLVV	145,20	10
1238	HPV	type 16 3	4	B*5201	WPYLHNRLVV	300,00	10
1239	HPV	type 16 3	4	A*0201	YLHNRLVVFT	433,63	10
1240	HPV	type 16 3	4	B*2705	NRLVVFTFPN	200,00	10
1241	HPV	type 16 3	4	Cw*0401	VFTFENEFPF	100,00	10
1242	HPV	type 16 3	4	B*5102	FFFDENGPNV	2200,00	10
1243	HPV	type 16 3	4	B60	DENGPNVYEL	320,00	10
1244	HPV	type 16 3	4	Cw*0401	SFFSRTWSRL	240,00	10
1245	HPV	type 16 3	4	B*2705	SRTWSRLSLH	200,00	10
1246	HPV	type 16 3	5	B*5103	LACFLLCFV	100,00	9
1247	HPV	type 16 3	5	B*5102	LACFLLCFV	100,00	9
1248	HPV	type 16 3	5	Cw*0401	CFLLCFVCF	100,00	9
1249	HPV	type 16 3	5	A*0201	FLLCFVCF	4064,58	9
1250	HPV	type 16 3	5	A*0201	LLCFVCFV	685,78	9
1251	HPV	type 16 3	5	A*0201	FLLCFVCFV	6865,90	10
1252	HPV	type 16 3	6	B*2705	LRLGVLLY	1000,00	8
1253	HPV	type 16 3	6	B*2705	LRLGVLLYI	600,00	9
1254	HPV	type 16 3	6	A*0205	GVLLYILYL	100,80	9
1255	HPV	type 16 3	6	A*0201	LLYLYLYFI	468,22	9
1256	HPV	type 16 3	6	A3	ILYLYFIHY	270,00	9
1257	HPV	type 16 3	6	B62	ILYLYFIHY	104,00	9
1258	HPV	type 16 3	6	A24	LYLYFIHYF	210,00	9
1259	HPV	type 16 3	6	Cw*0401	LYLYFIHYF	100,00	9
1260	HPV	type 16 3	6	B14	LRLGVLLYIL	300,00	10
1261	HPV	type 16 3	6	B*2705	LRLGVLLYIL	2000,00	10
1262	HPV	type 16 3	6	B62	RLGVLLYILY	192,00	10
1263	HPV	type 16 3	6	A*0201	VLLYILYLYFI	541,38	10
1264	HPV	type 16 3	6	A3	LLYLYLYFIY	270,00	10
1265	HPV	type 16 3	6	B62	ILYLYFIHYF	114,40	10
1266	HPV	type 16 3	7	B*2705	HRLPNFIK	2000,00	8
1267	HPV	type 16 3	7	B*5102	HANRQVHV	121,00	8
1268	HPV	type 16 3	7	B*2705	NRQVHVHL	2000,00	8
1269	HPV	type 16 3	7	B8	YLRLKAKL	160,00	8
1270	HPV	type 16 3	7	B*2705	LRLKAKLL	2000,00	8
1271	HPV	type 16 3	7	B*2705	LQNAQNVHR	100,00	9
1272	HPV	type 16 3	7	B*2705	HRLPNFIKH	200,00	9
1273	HPV	type 16 3	7	B7	ANRQVHVHL	120,00	9
1274	HPV	type 16 3	7	B*2705	NRQVHVHLT	200,00	9
1275	HPV	type 16 3	7	B*2705	RQVHVHLTL	600,00	9
1276	HPV	type 16 3	7	B*3901	VHVHLTLYL	180,00	9
1277	HPV	type 16 3	7	A68.1	HVHLTLYLR	200,00	9
1278	HPV	type 16 3	7	B*3901	VHLTLYLRL	180,00	9
1279	HPV	type 16 3	7	Cw*0301	VHLTLYLRL	100,00	9
1280	HPV	type 16 3	7	A24	LYLRLKAKL	396,00	9
1281	HPV	type 16 3	7	Cw*0401	LYLRLKAKL	264,00	9
1282	HPV	type 16 3	7	B8	YLRLKAKLL	160,00	9
1283	HPV	type 16 3	7	B14	LRLKAKLLL	100,00	9
1284	HPV	type 16 3	7	B*2705	LRLKAKLLL	2000,00	9
1285	HPV	type 16 3	7	B*2705	LQNAQNVHRL	200,00	10
1286	HPV	type 16 3	7	B*2705	AQNVHRLPNF	100,00	10
1287	HPV	type 16 3	7	A68.1	NVHRLPNFIK	120,00	10
1288	HPV	type 16 3	7	B*2705	NRQVHVHLTL	2000,00	10
1289	HPV	type 16 3	7	B*2705	RQVHVHLTL	300,00	10
1290	HPV	type 16 3	7	B*2705	TLYLRLKAKL	150,00	10
1291	HPV	type 16 3	7	Cw*0401	LYLRLKAKLL	200,00	10
1292	HPV	type 16 3	7	A24	LYLRLKAKLL	300,00	10
1293	HPV	type 16 3	7	B*2705	LRLKAKLLL	200,00	10
1294	HPV	type 16 3	7	A*0201	LLNKYYNMEV	118,24	10
1295	HPV	type 16 3	7	Cw*0401	YYNMEVWVYF	100,00	10
1296	HPV	type 16 3	7	A24	YYNMEVWVYF	210,00	10
1297	HPV	type 16 3	7	A*0201	YYNMEVWVYF	123,10	10
1298	HPV	type 16 3	8	B*5102	QGLPQLQI	290,40	8
1299	HPV	type 16 3	8	B*5102	LPQLQIHL	133,10	8
1300	HPV	type 16 3	8	Cw*0401	LPQLQIHL	160,00	9
1301	HPV	type 16 3	8	B*5102	LPQLQIHL	133,10	9
1302	HPV	type 16 3	8	B*3901	FHWEGQLPQL	540,00	10
1303	HPV	type 16 3	8	Cw*0301	QGLPQLQIHL	100,00	10
1304	HPV	type 16 3	8	B*5102	LPQLQIHL	110,00	10
1305	HPV	type 16 3	10	B*2705	HQHLVLYF	100,00	8
1306	HPV	type 16 3	10	B*5102	FPQMYQDL	220,00	8
1307	HPV	type 16 3	10	B*2705	QMYQDLVL	250,00	8
1308	HPV	type 16 3	10	B*2705	YQDLVLL	200,00	8
1309	HPV	type 16 3	10	B*2705	LQLIPHL	200,00	8
1310	HPV	type 16 3	10	B*5102	FPQMYQDLV	440,00	9
1311	HPV	type 16 3	10	A*0201	QMYQDLVLL	113,55	9
1312	HPV	type 16 3	10	B*2705	QMYQDLVLL	250,00	9
1313	HPV	type 16 3	10	A24	MYQDLVLLL	432,00	9
1314	HPV	type 16 3	10	Cw*0401	MYQDLVLLL	480,00	9
1315	HPV	type 16 3	10	A*0201	LLLQLIPHL	309,05	9

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1316	HPV	type 16 3	10	B*2705	LQLIPHLLY	100,00	9
1317	HPV	type 16 3	10	B*5102	LPPFPQMYQDL	550,00	10
1318	HPV	type 16 3	10	Cw*0301	LPPFPQMYQDL	180,00	10
1319	HPV	type 16 3	10	Cw*0401	LPPFPQMYQDL	105,60	10
1320	HPV	type 16 3	10	B*5102	FFQMYQDLVL	220,00	10
1321	HPV	type 16 3	10	A*0201	QMYQDLVLLL	113,55	10
1322	HPV	type 16 3	10	B*2705	QMYQDLVLLL	250,00	10
1323	HPV	type 16 3	10	B*2705	YQDLVLLLQL	200,00	10
1324	HPV	type 16 3	10	B*3701	QDLVLLLQLI	200,00	10
1325	HPV	type 16 3	10	A*0201	VLLQLIPHL	309,05	10
1326	HPV	type 16 3	10	A*0201	LLLQLIPHL	134,37	10
1327	HPV	type 16 3	11	B*5102	IFLSLTHL	330,00	8
1328	HPV	type 16 3	11	B*2705	LQKLEGIL	200,00	8
1329	HPV	type 16 3	11	B*3901	LHFHPL	180,00	8
1330	HPV	type 16 3	11	B*5102	HPLLVHII	1452,00	8
1331	HPV	type 16 3	11	B*2705	FLWIHLLL	150,00	8
1332	HPV	type 16 3	11	A*0201	LLHIIIPL	309,05	9
1333	HPV	type 16 3	11	B*3901	LHIIIPLSL	180,00	9
1334	HPV	type 16 3	11	B*2705	HLVCSLQHL	150,00	9
1335	HPV	type 16 3	11	B*5102	HPLLVHIIIM	108,90	9
1336	HPV	type 16 3	11	A3	LLVHIIMKK	135,00	9
1337	HPV	type 16 3	11	Cw*0401	KFLWIHLLL	200,00	9
1338	HPV	type 16 3	11	A*0201	FLWIHLLA	436,26	9
1339	HPV	type 16 3	11	B*3901	IHLILAQTL	180,00	9
1340	HPV	type 16 3	11	A*0201	LLHIIIPL	309,05	10
1341	HPV	type 16 3	11	Cw*0301	IIIPLSLTHL	100,00	10
1342	HPV	type 16 3	11	Cw*0301	LSLTHLYCSL	100,00	10
1343	HPV	type 16 3	11	B*3901	THLYCSLQHL	270,00	10
1344	HPV	type 16 3	11	B*2705	LQKLEGILHF	100,00	10
1345	HPV	type 16 3	11	B62	LQKLEGILHF	576,00	10
1346	HPV	type 16 3	11	A*0201	ILHFFHPLLV	118,24	10
1347	HPV	type 16 3	12	B*5102	LALGTVEL	199,65	8
1348	HPV	type 16 3	12	B*5103	LALGTVELV	132,00	9
1349	HPV	type 16 3	12	B*5102	LALGTVELV	399,30	9
1350	HPV	type 16 3	12	A24	HYVLVVENL	420,00	9
1351	HPV	type 16 3	12	Cw*0401	HYVLVVENL	400,00	9
1352	HPV	type 16 3	12	B*5102	LALGTVELVI	726,00	10
1353	HPV	type 16 3	12	B*5103	LALGTVELVI	145,20	10
1354	HPV	type 16 3	12	B*3901	KHYVLVVENL	270,00	10
1355	HPV	type 16 3	13	B*5102	YPLHLYQV	1452,00	8
1356	HPV	type 16 3	13	B*2705	HLVQVIFL	150,00	8
1357	HPV	type 16 3	13	B*2705	LQIQQFL	200,00	8
1358	HPV	type 16 3	13	B*2705	QQFLLVVH	100,00	8
1359	HPV	type 16 3	13	B*5201	YPLHLYQVI	220,00	9
1360	HPV	type 16 3	13	B*5102	YPLHLYQVI	2904,00	9
1361	HPV	type 16 3	13	B*3901	LHLYQVIFL	270,00	9
1362	HPV	type 16 3	13	A24	LYQVIFLQI	126,00	9
1363	HPV	type 16 3	13	Cw*0401	IFLQIQQFL	200,00	9
1364	HPV	type 16 3	13	A*0201	FLQIQQFL	569,95	9
1365	HPV	type 16 3	13	B*2705	QQFLLVVHT	100,00	9
1366	HPV	type 16 3	13	A*0201	LLVVHTIFL	199,74	9
1367	HPV	type 16 3	13	A24	LYPLHLYQVI	108,00	10
1368	HPV	type 16 3	13	A*0201	VIFLQIQQFL	101,62	10
1369	HPV	type 16 3	13	Cw*0401	IFLQIQQFL	200,00	10
1370	HPV	type 16 3	13	A*0201	FLQIQQFLV	607,88	10
1371	HPV	type 16 3	13	B*5201	LQIQQFLLV	495,00	10
1372	HPV	type 16 3	13	B*2705	QQFLLVVHTI	300,00	10
1373	HPV	type 16 3	13	B*5201	QQFLLVVHTI	120,00	10
1374	HPV	type 16 3	13	Cw*0401	QELLVVHTIF	100,00	10
1375	HPV	type 16 3	13	A*0201	FLLVVHTIFL	1999,73	10
1376	HPV	type 16 3	14	B*2705	ARTNIYYH	200,00	8
1377	HPV	type 16 3	14	B*2705	SRLAVGH	200,00	8
1378	HPV	type 16 3	14	B*5102	KPNNNKIL	121,00	8
1379	HPV	type 16 3	14	B*5201	LQYRVFRI	150,00	8
1380	HPV	type 16 3	14	B*2705	YRVFRIHL	2000,00	8
1381	HPV	type 16 3	14	B*5102	NPDTRQLV	121,00	8
1382	HPV	type 16 3	14	B*2705	QRLVWACV	600,00	8
1383	HPV	type 16 3	14	B*5102	WACVGVFV	121,00	8
1384	HPV	type 16 3	14	B*2705	GRGQPLGV	600,00	8
1385	HPV	type 16 3	14	B*2705	KQTQLCLI	180,00	8
1386	HPV	type 16 3	14	B*5102	SPCTNVAV	242,00	8
1387	HPV	type 16 3	14	B*5102	NPDCPPL	100,00	8
1388	HPV	type 16 3	14	B*5102	YPDYIKMV	200,00	8
1389	HPV	type 16 3	14	B*2705	LRREQMFV	600,00	8
1390	HPV	type 16 3	14	B*2705	RREQMFVR	3000,00	8
1391	HPV	type 16 3	14	B*2705	QMFVRHLF	125,00	8
1392	HPV	type 16 3	14	B*2705	AQIFNKPY	100,00	8
1393	HPV	type 16 3	14	B*2705	QRAQHNN	200,00	8
1394	HPV	type 16 3	14	B*2705	TRSTNMSL	2000,00	8
1395	HPV	type 16 3	14	B*3901	RHGEEYDL	180,00	8
1396	HPV	type 16 3	14	B*2705	LQFIFQLC	100,00	8
1397	HPV	type 16 3	14	B*2705	FQLCKITL	200,00	8
1398	HPV	type 16 3	14	B*5102	TADVMTYI	110,00	8
1399	HPV	type 16 3	14	B*5102	QPPPGGTL	110,00	8
1400	HPV	type 16 3	14	B*2705	YRFVTQAI	3000,00	8
1401	HPV	type 16 3	14	B*2705	TQAIACQK	200,00	8
1402	HPV	type 16 3	14	B*3501	APKEDDPL	180,00	8
1403	HPV	type 16 3	14	B*5102	FPLGRKFL	660,00	8
1404	HPV	type 16 3	14	B*2705	GRKFLQA	200,00	8
1405	HPV	type 16 3	14	B*2705	LQAGLKAK	200,00	8

1406	HPV	type 16 3	14	B8	KAKPKFTL	160,00	8
1407	HPV	type 16 3	14	B*2705	KRKATPTT	600,00	8
1408	HPV	type 16 3	14	A*0201	LMQVTFIYI	133,86	9
1409	HPV	type 16 3	14	B*2705	MQVTFIYIL	200,00	9
1410	HPV	type 16 3	14	B*3901	YHIFFFQMSL	180,00	9
1411	HPV	type 16 3	14	Cw*0401	IFFQMSLWL	220,00	9
1412	HPV	type 16 3	14	Cw*0401	LPSEATVYL	105,60	9
1413	HPV	type 16 3	14	B*5102	LPSEATVYL	133,10	9
1414	HPV	type 16 3	14	B*5103	EATVYLPV	110,00	9
1415	HPV	type 16 3	14	B*5102	EATVYLPV	100,00	9
1416	HPV	type 16 3	14	B*5102	LPPVPVSKV	400,00	9
1417	HPV	type 16 3	14	B*2705	ARTNIYYHA	200,00	9
1418	HPV	type 16 3	14	A24	YYHAGTSRL	200,00	9
1419	HPV	type 16 3	14	Cw*0401	YYHAGTSRL	300,00	9
1420	HPV	type 16 3	14	B*5102	KPNNNKILV	242,00	9
1421	HPV	type 16 3	14	Cw*0301	ILVPKVSGL	120,00	9
1422	HPV	type 16 3	14	B*3501	VPKVSGLQY	120,00	9
1423	HPV	type 16 3	14	A*0201	GLQYRVFRI	139,17	9
1424	HPV	type 16 3	14	A24	QYRVFRIHL	200,00	9
1425	HPV	type 16 3	14	Cw*0401	QYRVFRIHL	220,00	9
1426	HPV	type 16 3	14	B*2705	FRIHLDPFN	200,00	9
1427	HPV	type 16 3	14	Cw*0401	KFGFPDTSF	110,00	9
1428	HPV	type 16 3	14	A24	FYNPDQTQL	432,00	9
1429	HPV	type 16 3	14	Cw*0401	FYNPDQTQL	240,00	9
1430	HPV	type 16 3	14	B60	VEVGRGQEL	320,00	9
1431	HPV	type 16 3	14	B*5103	SAYAANAGV	330,00	9
1432	HPV	type 16 3	14	B*5102	SAYAANAGV	550,00	9
1433	HPV	type 16 3	14	B*5102	AGVDNRECT	290,40	9
1434	HPV	type 16 3	14	B*2702	NRECTSMDY	200,00	9
1435	HPV	type 16 3	14	B*2705	NRECTSMDY	1000,00	9
1436	HPV	type 16 3	14	A24	DYKQTQLCL	200,00	9
1437	HPV	type 16 3	14	Cw*0401	DYKQTQLCL	240,00	9
1438	HPV	type 16 3	14	B*2705	TQLCLIGCK	200,00	9
1439	HPV	type 16 3	14	B*3701	GDCPPELEI	200,00	9
1440	HPV	type 16 3	14	B*5102	VPLDICTSI	1200,00	9
1441	HPV	type 16 3	14	Cw*0301	CKYPDYIKM	125,00	9
1442	HPV	type 16 3	14	Cw*0401	FFYLRREQM	110,00	9
1443	HPV	type 16 3	14	A24	FYLRREQMF	180,00	9
1444	HPV	type 16 3	14	Cw*0401	FYLRREQMF	110,00	9
1445	HPV	type 16 3	14	A*0201	YLRREQMFV	133,73	9
1446	HPV	type 16 3	14	B*2705	LRREQMFVR	1000,00	9
1447	HPV	type 16 3	14	B*2705	RREQMFVRH	600,00	9
1448	HPV	type 16 3	14	B60	REQMFVRHL	160,00	9
1449	HPV	type 16 3	14	B*2705	NRAGTVGEN	200,00	9
1450	HPV	type 16 3	14	B*5103	RAGTVGENV	121,00	9
1451	HPV	type 16 3	14	B*5102	RAGTVGENV	133,10	9
1452	HPV	type 16 3	14	A68.1	NVPDDLYIK	120,00	9
1453	HPV	type 16 3	14	Cw*0401	YFPTPSGSM	110,00	9
1454	HPV	type 16 3	14	B*5102	FPTPSGSMV	400,00	9
1455	HPV	type 16 3	14	B*5103	RAQGHNNGI	110,00	9
1456	HPV	type 16 3	14	B*5102	RAQGHNNGI	242,00	9
1457	HPV	type 16 3	14	A68.1	FVTVDVTTT	300,00	9
1458	HPV	type 16 3	14	B*2705	TRSTNMSLC	200,00	9
1459	HPV	type 16 3	14	B*2705	LRHGEEDYL	2000,00	9
1460	HPV	type 16 3	14	B*2705	LQFIFQLCK	1000,00	9
1461	HPV	type 16 3	14	Cw*0401	IFQLCKITL	200,00	9
1462	HPV	type 16 3	14	B*2705	LQPPPGGTL	200,00	9
1463	HPV	type 16 3	14	B*2702	YRFVTAQAIA	100,00	9
1464	HPV	type 16 3	14	B*2705	YRFVTAQAIA	1000,00	9
1465	HPV	type 16 3	14	A24	KYTFWEVNL	400,00	9
1466	HPV	type 16 3	14	Cw*0401	KYTFWEVNL	200,00	9
1467	HPV	type 16 3	14	Cw*0401	KFSADLDQF	200,00	9
1468	HPV	type 16 3	14	B62	DQFPLGRKF	192,00	9
1469	HPV	type 16 3	14	Cw*0401	QFPLGRKFL	200,00	9
1470	HPV	type 16 3	14	B*5102	FPLGRKFL	660,00	9
1471	HPV	type 16 3	14	B*2705	KRKATPTTS	600,00	9
1472	HPV	type 16 3	14	B8	TAKRKKRKL	320,00	9
1473	HPV	type 16 3	14	Cw*0401	VYHIFFFQMSL	330,00	10
1474	HPV	type 16 3	14	A24	VYHIFFFQMSL	200,00	10
1475	HPV	type 16 3	14	A*0201	SLWLPSEATV	577,28	10
1476	HPV	type 16 3	14	A*0201	WLPSEATVYL	540,47	10
1477	HPV	type 16 3	14	A*0201	YLPPVPVSKV	735,86	10
1478	HPV	type 16 3	14	B*5102	LPPVPVSKVV	242,00	10
1479	HPV	type 16 3	14	B*5201	LPPVPVSKVV	435,60	10
1480	HPV	type 16 3	14	A68.1	VVSTDEYVAR	200,00	10
1481	HPV	type 16 3	14	Cw*0401	IYYHAGTSRL	200,00	10
1482	HPV	type 16 3	14	A24	IYYHAGTSRL	200,00	10
1483	HPV	type 16 3	14	Cw*0401	YYHAGTSRL	360,00	10
1484	HPV	type 16 3	14	A24	YYHAGTSRL	200,00	10
1485	HPV	type 16 3	14	B*5102	HAGTSRLAV	110,00	10
1486	HPV	type 16 3	14	B*5103	HAGTSRLAV	121,00	10
1487	HPV	type 16 3	14	B*2702	SRLAVGHPY	200,00	10
1488	HPV	type 16 3	14	B*2705	SRLAVGHPY	1000,00	10
1489	HPV	type 16 3	14	B*5102	LAVGHPYFPI	660,00	10
1490	HPV	type 16 3	14	B*5103	LAVGHPYFPI	110,00	10
1491	HPV	type 16 3	14	A68.1	AVGHPYFPIK	240,00	10
1492	HPV	type 16 3	14	A*0205	KILVPKVSGL	126,00	10
1493	HPV	type 16 3	14	B*5102	SGLQYRVFRI	528,00	10
1494	HPV	type 16 3	14	B*2705	LQYRVFRIHL	1000,00	10
1495	HPV	type 16 3	14	B*2705	FRIHLDPNPK	2000,00	10

1496	HPV	type 16 3	14	Cw*0401	SFYNPDTQRL	200,00	10
1497	HPV	type 16 3	14	B*2705	QRLVWACVGV	600,00	10
1498	HPV	type 16 3	14	B*2705	GRGQPLGVGI	600,00	10
1499	HPV	type 16 3	14	B*5102	NAGVDNRECI	242,00	10
1500	HPV	type 16 3	14	B*5103	NAGVDNRECI	121,00	10
1501	HPV	type 16 3	14	B*2705	NRECI SMDYK	2000,00	10
1502	HPV	type 16 3	14	B7	NPGDCPPELE	120,00	10
1503	HPV	type 16 3	14	B*5102	NPGDCPPELE	100,00	10
1504	HPV	type 16 3	14	B*5102	CPPELEINTV	266,20	10
1505	HPV	type 16 3	14	B*5102	PPELEINTVI	145,20	10
1506	HPV	type 16 3	14	Cw*0401	GFGAMDFITL	200,00	10
1507	HPV	type 16 3	14	B*2705	LQANKSEVPL	200,00	10
1508	HPV	type 16 3	14	A1	VSEPYGDSLF	135,00	10
1509	HPV	type 16 3	14	Cw*0401	LEFFYLRRQOM	110,00	10
1510	HPV	type 16 3	14	Cw*0401	FFYLRRQOMF	110,00	10
1511	HPV	type 16 3	14	B*2705	LRREQMFVRH	200,00	10
1512	HPV	type 16 3	14	B*2705	RREQMFVRHL	1800,00	10
1513	HPV	type 16 3	14	B*2705	QMFVRHLFNR	125,00	10
1514	HPV	type 16 3	14	B*2705	VRHLEFNRACT	200,00	10
1515	HPV	type 16 3	14	B*2705	NRAGTVGENV	600,00	10
1516	HPV	type 16 3	14	Cw*0401	NYFFTPSGSM	132,00	10
1517	HPV	type 16 3	14	B*2705	AQIFNKPYWL	200,00	10
1518	HPV	type 16 3	14	B*2705	QRAQGHNNGI	600,00	10
1519	HPV	type 16 3	14	B*2705	TRSTNMSLCA	200,00	10
1520	HPV	type 16 3	14	B*2705	KEYLRHGEEY	225,00	10
1521	HPV	type 16 3	14	Cw*0401	EYDLQFIFQL	600,00	10
1522	HPV	type 16 3	14	A24	EYDLQFIFQL	200,00	10
1523	HPV	type 16 3	14	B*2705	LQFIFQLCKI	300,00	10
1524	HPV	type 16 3	14	A*0201	TLTADVMTYI	131,97	10
1525	HPV	type 16 3	14	A*0201	TILEDWNFGI	258,44	10
1526	HPV	type 16 3	14	B*2702	YRFVTQAIAC	100,00	10
1527	HPV	type 16 3	14	B*2705	YRFVTQAIAC	1000,00	10
1528	HPV	type 16 3	14	A68.1	FVTQAIACQK	120,00	10
1529	HPV	type 16 3	14	B*2705	CQKHTEPPAPK	200,00	10
1530	HPV	type 16 3	14	Cw*0401	QFPLGRKFLI	220,00	10
1531	HPV	type 16 3	14	B*2705	GRKFLIQAQGL	2000,00	10
1532	HPV	type 16 3	14	B*2705	KRKATPTTSS	600,00	10
1533	HPV	type 16 3	15	Cw*0401	FFTLHYVQL	220,00	9
1534	HPV	type 16 3	15	A*0201	YVQLLNHYV	153,97	9
1535	HPV	type 16 3	15	A*0201	LLNHYVHCV	271,95	9
1536	HPV	type 16 3	15	A*0201	CLPTIPLFFT	546,75	10
1537	HPV	type 16 3	15	B*5102	LPTIPLFFT	110,00	10
1538	HPV	type 16 3	15	B*5102	IFLFFTLHYV	726,00	10
1539	HPV	type 16 3	15	Cw*0401	LFFTLHYVQL	220,00	10
1540	HPV	type 16 3	15	Cw*0401	FFTLHYVQLL	400,00	10
1541	HPV	type 16 3	15	A*0201	QLLNHYVHCV	591,89	10
1542	HPV	type 16 3	2	B*5102	MGHMLYV	132,00	8
1543	HPV	type 16 3	2	B*5201	MGHMLYVI	272,25	9
1544	HPV	type 16 3	2	B*5102	MGHMLYVI	264,00	9
1545	HPV	type 16 3	3	B*2705	CRGCSGKK	600,00	8
1546	HPV	type 16 3	3	A68.1	MVLCRGCSGK	240,00	10
1547	HPV	type 16 3	3	B*2705	CRGCSGKKNR	300,00	10
1548	HPV	type 16 3	4	B*5102	YGVSFSEL	132,00	8
1549	HPV	type 16 3	4	B*2705	VRFFKSNN	2000,00	8
1550	HPV	type 16 3	4	B*5102	TPSIADSI	400,00	8
1551	HPV	type 16 3	4	B*2705	LQQYCLYL	200,00	8
1552	HPV	type 16 3	4	B*2705	QQYCLYLH	100,00	8
1553	HPV	type 16 3	4	B*5102	LACSWGMV	100,00	8
1554	HPV	type 16 3	4	B*2705	VRYKCKGN	300,00	8
1555	HPV	type 16 3	4	B*2705	NRETIKEL	600,00	8
1556	HPV	type 16 3	4	B*2705	LRSTAAAL	2000,00	8
1557	HPV	type 16 3	4	B*2705	QRQTVLQH	200,00	8
1558	HPV	type 16 3	4	B*2705	SQMVQWAY	100,00	8
1559	HPV	type 16 3	4	B*5102	WAYDNDIV	550,00	8
1560	HPV	type 16 3	4	B*5102	IAYKYAQL	302,50	8
1561	HPV	type 16 3	4	B*2705	KRAEKKQM	1800,00	8
1562	HPV	type 16 3	4	B*2705	KQIVMFLR	300,00	8
1563	HPV	type 16 3	4	B*2705	LRYQGVFE	5000,00	8
1564	HPV	type 16 3	4	B*2705	KRFLQGIP	300,00	8
1565	HPV	type 16 3	4	B*2705	LQGSVICF	100,00	8
1566	HPV	type 16 3	4	B*3901	SHFWLQPL	180,00	8
1567	HPV	type 16 3	4	B*2705	LQPLADAK	200,00	8
1568	HPV	type 16 3	4	B*5102	QPLADAKI	1320,00	8
1569	HPV	type 16 3	4	B*2705	WNYIDNLI	100,00	8
1570	HPV	type 16 3	4	B*2705	LRNALDGN	200,00	8
1571	HPV	type 16 3	4	B*5102	NALDGNLV	363,00	8
1572	HPV	type 16 3	4	B*2705	HRPLVQLK	2000,00	8
1573	HPV	type 16 3	4	B*2705	VQLKCPPL	200,00	8
1574	HPV	type 16 3	4	B*2705	SRWPYLHN	1000,00	8
1575	HPV	type 16 3	4	B*5102	WPYLHNRL	665,50	8
1576	HPV	type 16 3	4	B*2705	NRLVVFTE	1000,00	8
1577	HPV	type 16 3	4	B*2705	SRTWSRLS	200,00	8
1578	HPV	type 16 3	4	B*2705	RTWSRLSL	150,00	8
1579	HPV	type 16 3	4	B*2705	GRHETETPC	200,00	9
1580	HPV	type 16 3	4	A1	ETETPCSQY	112,50	9
1581	HPV	type 16 3	4	B*5102	EGVSRHTI	264,00	9
1582	HPV	type 16 3	4	B*2705	CQPLTNIL	200,00	9
1583	HPV	type 16 3	4	B*5102	TPLTNILNV	798,60	9
1584	HPV	type 16 3	4	A68.1	NVLKTSNAK	240,00	9
1585	HPV	type 16 3	4	A*0201	AMLAKFKEL	108,46	9

1586	HPV	type 16 3	4	Cw*0301	AMLAKFKEL	120,00	9
1587	HPV	type 16 3	4	A24	LYGVSFSEL	264,00	9
1588	HPV	type 16 3	4	Cw*0401	LYGVSFSEL	200,00	9
1589	HPV	type 16 3	4	B*5102	YGVSFSELV	264,00	9
1590	HPV	type 16 3	4	A68.1	GVSFSELVR	300,00	9
1591	HPV	type 16 3	4	Cw*0401	SFSELVRFF	240,00	9
1592	HPV	type 16 3	4	A68.1	LVRPFKSNK	180,00	9
1593	HPV	type 16 3	4	B*2705	VRPFKSNKS	200,00	9
1594	HPV	type 16 3	4	B*5103	AAFGLTPSI	145,20	9
1595	HPV	type 16 3	4	B*5102	AAFGLTPSI	1210,00	9
1596	HPV	type 16 3	4	A*0201	LLQQYCLYL	199,74	9
1597	HPV	type 16 3	4	B*2705	QQYCLYLHI	300,00	9
1598	HPV	type 16 3	4	B*5201	QQYCLYLHI	100,00	9
1599	HPV	type 16 3	4	A*0201	CLYLHIQSL	157,23	9
1600	HPV	type 16 3	4	B*2705	CLYLHIQSL	150,00	9
1601	HPV	type 16 3	4	B*5103	LACSWGMMV	110,00	9
1602	HPV	type 16 3	4	B*5102	LACSWGMMV	100,00	9
1603	HPV	type 16 3	4	A68.1	VVLLLVRYK	240,00	9
1604	HPV	type 16 3	4	B*2705	VRYKCGKNR	1500,00	9
1605	HPV	type 16 3	4	B*2705	NRETIEKLL	600,00	9
1606	HPV	type 16 3	4	A68.1	ETIEKLLSK	180,00	9
1607	HPV	type 16 3	4	B60	TEKLLSKLL	176,00	9
1608	HPV	type 16 3	4	A*0201	KLLSKLLCV	2071,61	9
1609	HPV	type 16 3	4	B*2702	LRSTAAALY	200,00	9
1610	HPV	type 16 3	4	B*2705	LRSTAAALY	1000,00	9
1611	HPV	type 16 3	4	B*5801	RSTAAALYW	264,00	9
1612	HPV	type 16 3	4	B*5102	TGISNISEV	145,20	9
1613	HPV	type 16 3	4	B*2705	QRQTVLQHS	200,00	9
1614	HPV	type 16 3	4	B*2705	RQTVLQHSF	300,00	9
1615	HPV	type 16 3	4	B62	RQTVLQHSF	160,00	9
1616	HPV	type 16 3	4	Cw*0401	SFNDCTFEL	240,00	9
1617	HPV	type 16 3	4	B*2705	VQWYDNDI	300,00	9
1618	HPV	type 16 3	4	A1	IVDDSEIAY	125,00	9
1619	HPV	type 16 3	4	A68.1	ATMCRHYKR	100,00	9
1620	HPV	type 16 3	4	B*2705	CRHYKRAEK	2000,00	9
1621	HPV	type 16 3	4	B*2705	KRAEKKQMS	600,00	9
1622	HPV	type 16 3	4	B*2705	KQMSMSQWI	180,00	9
1623	HPV	type 16 3	4	A68.1	RVDDGGDWK	120,00	9
1624	HPV	type 16 3	4	B*2705	KQIVMFLRY	300,00	9
1625	HPV	type 16 3	4	A*0201	VMFLRYQGV	473,94	9
1626	HPV	type 16 3	4	B62	FLRYQGVFE	144,00	9
1627	HPV	type 16 3	4	B*2702	LRYQGVFEF	100,00	9
1628	HPV	type 16 3	4	B*2705	LRYQGVFEF	3000,00	9
1629	HPV	type 16 3	4	B*2705	YQGVFEFMS	100,00	9
1630	HPV	type 16 3	4	B62	YQGVFEFMS	160,00	9
1631	HPV	type 16 3	4	Cw*0401	EFMSFLTAL	400,00	9
1632	HPV	type 16 3	4	Cw*0401	SFLTALKRF	220,00	9
1633	HPV	type 16 3	4	A*0201	FLTALKRFL	108,09	9
1634	HPV	type 16 3	4	B*2705	KRFLQGIPK	30000,00	9
1635	HPV	type 16 3	4	B*5102	QGIPKNCI	240,00	9
1636	HPV	type 16 3	4	A3	SLFGMSLMK	300,00	9
1637	HPV	type 16 3	4	B*2705	SLFGMSLMK	150,00	9
1638	HPV	type 16 3	4	Cw*0401	LFGMSLMKF	220,00	9
1639	HPV	type 16 3	4	A*0201	LQGSVICFV	151,65	9
1640	HPV	type 16 3	4	A68.1	SVICFVNSK	240,00	9
1641	HPV	type 16 3	4	Cw*0401	CFVNSKSHF	110,00	9
1642	HPV	type 16 3	4	B*2705	LRNALDGNL	2000,00	9
1643	HPV	type 16 3	4	A68.1	LVSMDVKHR	300,00	9
1644	HPV	type 16 3	4	B*2705	HRPLVQLKC	200,00	9
1645	HPV	type 16 3	4	B*2705	VQLKCPPLL	200,00	9
1646	HPV	type 16 3	4	B*5102	PPLLITSNL	145,20	9
1647	HPV	type 16 3	4	B*2705	SRWPLYLNR	5000,00	9
1648	HPV	type 16 3	4	B*5103	WPLYLHNLV	132,00	9
1649	HPV	type 16 3	4	B*5102	WPLYLHNLV	1331,00	9
1650	HPV	type 16 3	4	B*2705	KNWKSFFSR	150,00	9
1651	HPV	type 16 3	4	Cw*0401	FFSRTWSRL	240,00	9
1652	HPV	type 16 3	4	B14	SRTWSRLSL	100,00	9
1653	HPV	type 16 3	4	B*2705	SRTWSRLSL	2000,00	9
1654	HPV	type 16 3	4	B*2705	GRHETETPCS	200,00	10
1655	HPV	type 16 3	4	B*2705	ERHTICQTPL	200,00	10
1656	HPV	type 16 3	4	B*5102	TPLTNILNVL	330,00	10
1657	HPV	type 16 3	4	Cw*0401	TPLTNILNVL	160,00	10
1658	HPV	type 16 3	4	B7	AAMLAKFKEL	108,00	10
1659	HPV	type 16 3	4	Cw*0301	AAMLAKFKEL	240,00	10
1660	HPV	type 16 3	4	B*5103	LAKFKELYGV	100,00	10
1661	HPV	type 16 3	4	Cw*0401	KFKELYGVSF	132,00	10
1662	HPV	type 16 3	4	Cw*0301	ELYGVSFSEL	120,00	10
1663	HPV	type 16 3	4	B*5801	KSNKSTCCDW	480,00	10
1664	HPV	type 16 3	4	B*5102	IAAFGLTPSI	220,00	10
1665	HPV	type 16 3	4	B*5103	IAAFGLTPSI	110,00	10
1666	HPV	type 16 3	4	A*0201	TELQQYCLYL	434,72	10
1667	HPV	type 16 3	4	A68.1	MVLLLVRYK	240,00	10
1668	HPV	type 16 3	4	A68.1	LVRKCGKNR	200,00	10
1669	HPV	type 16 3	4	B*2705	VRYKCGKNR	100,00	10
1670	HPV	type 16 3	4	B*2705	NRETIEKLLS	200,00	10
1671	HPV	type 16 3	4	B62	KLRSTAAALY	120,00	10
1672	HPV	type 16 3	4	B*2702	LRSTAAALYW	100,00	10
1673	HPV	type 16 3	4	B*2705	LRSTAAALYW	200,00	10
1674	HPV	type 16 3	4	B*5102	AALYWKGTGI	600,00	10
1675	HPV	type 16 3	4	B*5103	AALYWKGTGI	132,00	10

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1676	HPV	type 16 3	4	B*5102	TPEWIORQTV	133,10	10	
1677	HPV	type 16 3	4	B*2702	QRQTVLQHSF	200,00	10	
1678	HPV	type 16 3	4	B*2705	QRQTVLQHSF	1000,00	10	
1679	HPV	type 16 3	4	B*2705	LQHSFNDCTF	100,00	10	
1680	HPV	type 16 3	4	B*2705	VQWAYDNDIV	300,00	10	
1681	HPV	type 16 3	4	B*5201	VQWAYDNDIV	990,00	10	
1682	HPV	type 16 3	4	A68.1	IVDDSEIAYK	120,00	10	
1683	HPV	type 16 3	4	B60	SEIAYKYAQL	352,00	10	
1684	HPV	type 16 3	4	Cw*0301	SEIAYKYAQL	100,00	10	
1685	HPV	type 16 3	4	A68.1	IVKDCATMCR	200,00	10	
1686	HPV	type 16 3	4	B*2705	CRHYKRAEKK	2000,00	10	
1687	HPV	type 16 3	4	Cw*0401	HYKRAEKKQM	100,00	10	
1688	HPV	type 16 3	4	B*2705	KRAEKKQMSM	1800,00	10	
1689	HPV	type 16 3	4	B*2705	KQMSMSQWIK	600,00	10	
1690	HPV	type 16 3	4	B*2705	SQWIKYRCDR	500,00	10	
1691	HPV	type 16 3	4	B*2705	DRVDDGGDWK	200,00	10	
1692	HPV	type 16 3	4	B*3701	GDWKQIVMFL	300,00	10	
1693	HPV	type 16 3	4	Cw*0401	MFLRYQGVEF	100,00	10	
1694	HPV	type 16 3	4	B*2705	LRYQGVFEMS	1000,00	10	
1695	HPV	type 16 3	4	Cw*0401	RYQGVFEMS	110,00	10	
1696	HPV	type 16 3	4	A24	RYQGVFEMS	360,00	10	
1697	HPV	type 16 3	4	A*0201	YQGVFEMSFL	478,93	10	
1698	HPV	type 16 3	4	B*2705	YQGVFEMSFL	200,00	10	
1699	HPV	type 16 3	4	B*2705	VEFMSFLTAL	150,00	10	
1700	HPV	type 16 3	4	B60	VEFMSFLTAL	160,00	10	
1701	HPV	type 16 3	4	Cw*0401	SFLTALKRFL	200,00	10	
1702	HPV	type 16 3	4	B*5102	TALKRFLQGI	726,00	10	
1703	HPV	type 16 3	4	B*5103	TALKRFLQGI	132,00	10	
1704	HPV	type 16 3	4	B*2705	KRFLQGI PKK	30000,00	10	10
1705	HPV	type 16 3	4	Cw*0301	QGITPKKNCIL	100,00	10	
1706	HPV	type 16 3	4	B*3501	IPKKNCILY	120,00	10	
1707	HPV	type 16 3	4	A3	LLYGAANTGK	150,00	10	
1708	HPV	type 16 3	4	B*2705	LLYGAANTGK	150,00	10	
1709	HPV	type 16 3	4	Cw*0401	LFGMSLMKFL	240,00	10	
1710	HPV	type 16 3	4	Cw*0401	KFLQGSVICF	200,00	10	
1711	HPV	type 16 3	4	A*0201	FLQGSVICFV	4047,23	10	
1712	HPV	type 16 3	4	A*0201	FVNSKSHFWL	274,29	10	
1713	HPV	type 16 3	4	B*5102	DATVPCWNYI	220,00	10	
1714	HPV	type 16 3	4	B*5103	DATVPCWNYI	121,00	10	
1715	HPV	type 16 3	4	B*2705	LRNALDGNLV	600,00	10	
1716	HPV	type 16 3	4	B*5102	CPPLLITSNI	484,00	10	
1717	HPV	type 16 3	4	B*2702	SRWPYLHNRL	300,00	10	
1718	HPV	type 16 3	4	B*2705	SRWPYLHNRL	10000,00	10	10
1719	HPV	type 16 3	4	B*5102	WPYLHNRLVV	1210,00	10	
1720	HPV	type 16 3	4	B*5103	WPYLHNRLVV	145,20	10	
1721	HPV	type 16 3	4	B*5201	WPYLHNRLVV	300,00	10	
1722	HPV	type 16 3	4	A*0201	YLHNRLVVFT	433,63	10	
1723	HPV	type 16 3	4	B*2705	NRLVVFTFPN	200,00	10	
1724	HPV	type 16 3	4	Cw*0401	VFTFPNEFPF	100,00	10	
1725	HPV	type 16 3	4	B*5102	FPPDENGPNV	2200,00	10	
1726	HPV	type 16 3	4	B60	DENGPNVYEL	320,00	10	
1727	HPV	type 16 3	4	Cw*0401	SFFSRTWSRL	240,00	10	
1728	HPV	type 16 3	4	B*2705	SRTWSRLSLH	200,00	10	
1729	HPV	type 16 3	5	A*0201	YLLQGGQNGI	177,57	10	
1730	HPV	type 16 3	7	B*2705	MQYNALYK	1000,00	8	
1731	HPV	type 16 3	7	B*2705	MQYNALYKL	1000,00	9	
1732	HPV	type 16 3	7	A*0201	ALYKLDITYI	183,62	9	
1733	HPV	type 16 3	7	Cw*0301	YKLDITYIYL	100,00	9	
1734	HPV	type 16 3	7	B*5102	NALYKLDITYI	660,00	10	
1735	HPV	type 16 3	7	B*5103	NALYKLDITYI	120,00	10	
1736	HPV	type 16 3	7	Cw*0401	LYKLDITYIYL	240,00	10	
1737	HPV	type 16 3	7	A24	LYKLDITYIYL	200,00	10	
1738	HPV	type 16 3	9	B*3701	LDTPASTTLL	200,00	9	
1739	HPV	type 16 3	9	B*5103	LACFLLCFV	100,00	9	
1740	HPV	type 16 3	9	B*5102	LACFLLCFV	100,00	9	
1741	HPV	type 16 3	9	Cw*0401	CFLLCFVCF	100,00	9	
1742	HPV	type 16 3	9	A*0201	FLLCFVCF	4064,58	9	
1743	HPV	type 16 3	9	A*0201	LLCFVCFV	685,78	9	
1744	HPV	type 16 3	9	A*0201	LLACFLLCFV	1495,72	10	
1745	HPV	type 16 3	9	A*0201	FLLCFVCFV	6865,90	10	
1746	HPV	type 16 3	11	B*2705	HQHLYLPPF	100,00	8	
1747	HPV	type 16 3	11	B*5102	FPQMYQDL	220,00	8	
1748	HPV	type 16 3	11	B*2705	QMYQDLVL	250,00	8	
1749	HPV	type 16 3	11	B*2705	YQDLVLLL	200,00	8	
1750	HPV	type 16 3	11	B*2705	LQLIPHL	200,00	8	
1751	HPV	type 16 3	11	A*0201	MLVHQHLYL	199,74	9	
1752	HPV	type 16 3	11	B*5102	FPQMYQDLV	440,00	9	
1753	HPV	type 16 3	11	A*0201	QMYQDLVLL	113,55	9	
1754	HPV	type 16 3	11	B*2705	QMYQDLVLL	250,00	9	
1755	HPV	type 16 3	11	A24	MYQDLVLLL	432,00	9	
1756	HPV	type 16 3	11	Cw*0401	MYQDLVLLL	480,00	9	
1757	HPV	type 16 3	11	A*0201	LLLQLIPHL	309,05	9	
1758	HPV	type 16 3	11	B*2705	LQLIPHL	100,00	9	
1759	HPV	type 16 3	11	B*5102	LFFFPQMYQDL	550,00	10	
1760	HPV	type 16 3	11	Cw*0301	LFFFPQMYQDL	180,00	10	
1761	HPV	type 16 3	11	Cw*0401	LFFFPQMYQDL	105,60	10	
1762	HPV	type 16 3	11	B*5102	FPQMYQDLVL	220,00	10	
1763	HPV	type 16 3	11	A*0201	QMYQDLVLLL	113,55	10	
1764	HPV	type 16 3	11	B*2705	QMYQDLVLLL	250,00	10	
1765	HPV	type 16 3	11	B*2705	YQDLVLLLQL	200,00	10	

1766	HPV	type 16 3	11	B*3701	QDLVLLQLLI	200,00	10
1767	HPV	type 16 3	11	A*0201	VLLQLLIHFL	309,05	10
1768	HPV	type 16 3	11	A*0201	LLLQLIPIHLL	134,37	10
1769	HPV	type 16 3	12	B*2705	FLWHLHLL	150,00	8
1770	HPV	type 16 3	12	Cw*0401	KFLWHLHLL	200,00	9
1771	HPV	type 16 3	12	A*0201	FLWHLHLLA	436,26	9
1772	HPV	type 16 3	12	B*3901	IHLHLLAQT	180,00	9
1773	HPV	type 16 3	14	Cw*0301	MWIIHYIFL	100,00	9
1774	HPV	type 16 3	14	A*0201	WIIHYIFLV	586,85	9
1775	HPV	type 16 3	14	A*0201	YIFLVMTIV	153,49	9
1776	HPV	type 16 3	14	B*5201	YIFLVMTIV	120,00	9
1777	HPV	type 16 3	14	Cw*0401	IFLVMTIVL	440,00	9
1778	HPV	type 16 3	14	A*0201	FLVMTIVLI	110,38	9
1779	HPV	type 16 3	14	A*0205	YIFLVMTIVL	126,00	10
1780	HPV	type 16 3	15	B*2705	MQPHLLLL	200,00	8
1781	HPV	type 16 3	15	B*5102	QPHLLLLLI	440,00	8
1782	HPV	type 16 3	15	B*2705	LQILLQPR	100,00	8
1783	HPV	type 16 3	15	B*2705	LQPRYHLY	100,00	8
1784	HPV	type 16 3	15	B*2705	PRYHLYPL	1000,00	8
1785	HPV	type 16 3	15	B*3901	YHLYPLHL	270,00	8
1786	HPV	type 16 3	15	B*5102	YPLHLYQV	1452,00	8
1787	HPV	type 16 3	15	B*2705	HLYQVIFL	150,00	8
1788	HPV	type 16 3	15	B*2705	LQIQQFLL	200,00	8
1789	HPV	type 16 3	15	B*2705	QQFLLVVH	100,00	8
1790	HPV	type 16 3	15	Cw*0401	QPHLLLLIM	120,00	9
1791	HPV	type 16 3	15	A*0201	LLLLIMDYM	193,70	9
1792	HPV	type 16 3	15	A*0201	LIMDYMIFM	222,85	9
1793	HPV	type 16 3	15	B*2705	MQMTLLQIL	200,00	9
1794	HPV	type 16 3	15	B*2705	LQILLQPRY	100,00	9
1795	HPV	type 16 3	15	B62	LQILLQPRY	160,00	9
1796	HPV	type 16 3	15	A*0201	ILLQPRYHL	134,37	9
1797	HPV	type 16 3	15	B7	QPRYHLYPL	800,00	9
1798	HPV	type 16 3	15	Cw*0401	QPRYHLYPL	176,00	9
1799	HPV	type 16 3	15	B*2705	PRYHLYPLH	100,00	9
1800	HPV	type 16 3	15	A24	RYHLYPLHL	400,00	9
1801	HPV	type 16 3	15	Cw*0401	RYHLYPLHL	330,00	9
1802	HPV	type 16 3	15	B*5201	YPLHLYQVI	220,00	9
1803	HPV	type 16 3	15	B*5102	YPLHLYQVI	2904,00	9
1804	HPV	type 16 3	15	B*3901	LHLYQVIFL	270,00	9
1805	HPV	type 16 3	15	A24	LYQVIFLQI	126,00	9
1806	HPV	type 16 3	15	Cw*0401	IFLQIQQFL	200,00	9
1807	HPV	type 16 3	15	A*0201	FLQIQQFLL	569,95	9
1808	HPV	type 16 3	15	B*2705	QQFLLVVHT	100,00	9
1809	HPV	type 16 3	15	A*0201	LLVVHTIFL	199,74	9
1810	HPV	type 16 3	15	B*5201	MQPHLLLLIM	198,00	10
1811	HPV	type 16 3	15	A*0201	LLIMDYMIFM	106,84	10
1812	HPV	type 16 3	15	Cw*0401	DYMIFMQMTL	220,00	10
1813	HPV	type 16 3	15	A24	DYMIFMQMTL	300,00	10
1814	HPV	type 16 3	15	A*0201	YMIFMQMTLL	163,23	10
1815	HPV	type 16 3	15	B*2705	MQMTLLQILL	200,00	10
1816	HPV	type 16 3	15	B*2705	LQPRYHLYPL	200,00	10
1817	HPV	type 16 3	15	B*2705	PRYHLYPLHL	1000,00	10
1818	HPV	type 16 3	15	A24	LYPLHLYQVI	108,00	10
1819	HPV	type 16 3	15	A*0201	VIFLQIQQFL	101,62	10
1820	HPV	type 16 3	15	Cw*0401	IFLQIQQFLL	200,00	10
1821	HPV	type 16 3	15	A*0201	FLQIQQFLLV	607,88	10
1822	HPV	type 16 3	15	B*5201	LQIQQFLLV	495,00	10
1823	HPV	type 16 3	15	B*2705	QQFLLVVHTI	300,00	10
1824	HPV	type 16 3	15	B*5201	QQFLLVVHTI	120,00	10
1825	HPV	type 16 3	15	Cw*0401	QFLLVVHTIF	100,00	10
1826	HPV	type 16 3	15	A*0201	FLLVVHTIFL	1999,73	10
1827	HPV	type 16 3	16	B*2705	ARTNIYYH	200,00	8
1828	HPV	type 16 3	16	B*2705	SRLLAUGH	200,00	8
1829	HPV	type 16 3	16	B*5102	KPNNNKIL	121,00	8
1830	HPV	type 16 3	16	B*5201	LQYRVFRI	150,00	8
1831	HPV	type 16 3	16	B*2705	YRVFRIHL	2000,00	8
1832	HPV	type 16 3	16	B*5102	NPDTRQLV	121,00	8
1833	HPV	type 16 3	16	B*2705	QRLVWACV	600,00	8
1834	HPV	type 16 3	16	B*5102	WACVGVFV	121,00	8
1835	HPV	type 16 3	16	B*2705	GRGQPLGV	600,00	8
1836	HPV	type 16 3	16	B*2705	KQTQLCLI	180,00	8
1837	HPV	type 16 3	16	B*5102	SFCTNNAV	242,00	8
1838	HPV	type 16 3	16	B*5102	NPGDCPPL	100,00	8
1839	HPV	type 16 3	16	B*5102	YPDYIKMV	200,00	8
1840	HPV	type 16 3	16	B*2705	LRREQMFV	600,00	8
1841	HPV	type 16 3	16	B*2705	RREQMFVR	3000,00	8
1842	HPV	type 16 3	16	B*2705	QMFVRHLF	125,00	8
1843	HPV	type 16 3	16	B*2705	AQIFNKPY	100,00	8
1844	HPV	type 16 3	16	B*2705	QRAQGHNN	200,00	8
1845	HPV	type 16 3	16	B*2705	TRSTNMSL	2000,00	8
1846	HPV	type 16 3	16	B*3901	RHGEEYDL	180,00	8
1847	HPV	type 16 3	16	B*2705	LQFIFQLC	100,00	8
1848	HPV	type 16 3	16	B*2705	FQLCKITL	200,00	8
1849	HPV	type 16 3	16	B*5102	TADVMTYI	110,00	8
1850	HPV	type 16 3	16	B*5102	QPPPGGTL	110,00	8
1851	HPV	type 16 3	16	B*2705	YRFVTQAI	3000,00	8
1852	HPV	type 16 3	16	B*2705	TQAIACQK	200,00	8
1853	HPV	type 16 3	16	B*3501	APKEDDPL	180,00	8
1854	HPV	type 16 3	16	B*5102	FPLGRKFL	660,00	8
1855	HPV	type 16 3	16	B*2705	GRKFLQLA	200,00	8

1856	HPV	type 16 3	16	B*2705	LQAGLKAK	200,00	8
1857	HPV	type 16 3	16	B8	KAKPKFTL	160,00	8
1858	HPV	type 16 3	16	B*2705	KRKATPTT	600,00	8
1859	HPV	type 16 3	16	B*2705	MQVFFIYL	200,00	9
1860	HPV	type 16 3	16	B*3901	YHIFFFQMSL	180,00	9
1861	HPV	type 16 3	16	Cw*0401	IFFQMSLWL	220,00	9
1862	HPV	type 16 3	16	Cw*0401	LPSEATVYL	105,60	9
1863	HPV	type 16 3	16	B*5102	LPSEATVYL	133,10	9
1864	HPV	type 16 3	16	B*5103	EATVYLPFV	110,00	9
1865	HPV	type 16 3	16	B*5102	EATVYLPFV	100,00	9
1866	HPV	type 16 3	16	B*5102	LPPVPVSKV	400,00	9
1867	HPV	type 16 3	16	B*2705	ARTNIYYHA	200,00	9
1868	HPV	type 16 3	16	A24	YYHAGTSRL	200,00	9
1869	HPV	type 16 3	16	Cw*0401	YYHAGTSRL	300,00	9
1870	HPV	type 16 3	16	B*5102	KPNNNKILV	242,00	9
1871	HPV	type 16 3	16	Cw*0301	ILVPKVSGL	120,00	9
1872	HPV	type 16 3	16	B*3501	VPKVSGLQY	120,00	9
1873	HPV	type 16 3	16	A*0201	GLQYRVFRI	139,17	9
1874	HPV	type 16 3	16	A24	QYRVFRIHL	200,00	9
1875	HPV	type 16 3	16	Cw*0401	QYRVFRIHL	220,00	9
1876	HPV	type 16 3	16	B*2705	FRIHLPDEN	200,00	9
1877	HPV	type 16 3	16	Cw*0401	KFGFPDTSF	110,00	9
1878	HPV	type 16 3	16	A24	FYNPDTQRL	432,00	9
1879	HPV	type 16 3	16	Cw*0401	FYNPDTQRL	240,00	9
1880	HPV	type 16 3	16	B60	VEVGRGQEL	320,00	9
1881	HPV	type 16 3	16	B*5103	SAYAANAGV	330,00	9
1882	HPV	type 16 3	16	B*5102	SAYAANAGV	550,00	9
1883	HPV	type 16 3	16	B*5102	AGVDNRECT	290,40	9
1884	HPV	type 16 3	16	B*2702	NRECISMDY	200,00	9
1885	HPV	type 16 3	16	B*2705	NRECISMDY	1000,00	9
1886	HPV	type 16 3	16	A24	DYKQTQLCL	200,00	9
1887	HPV	type 16 3	16	Cw*0401	DYKQTQLCL	240,00	9
1888	HPV	type 16 3	16	B*2705	TQLCLIGCK	200,00	9
1889	HPV	type 16 3	16	B*3701	GDCPPLELI	200,00	9
1890	HPV	type 16 3	16	B*5102	VPLDICTSI	1200,00	9
1891	HPV	type 16 3	16	Cw*0301	CKYPDYIKM	125,00	9
1892	HPV	type 16 3	16	Cw*0401	FFYLRREQM	110,00	9
1893	HPV	type 16 3	16	A24	FYLRREQMF	180,00	9
1894	HPV	type 16 3	16	Cw*0401	FYLRREQMF	110,00	9
1895	HPV	type 16 3	16	A*0201	YLRREQMFV	133,73	9
1896	HPV	type 16 3	16	B*2705	LRREQMFVR	1000,00	9
1897	HPV	type 16 3	16	B*2705	RREQMFVRH	600,00	9
1898	HPV	type 16 3	16	B60	REQMFVRHL	160,00	9
1899	HPV	type 16 3	16	B*2705	NRAGTVGEN	200,00	9
1900	HPV	type 16 3	16	B*5103	RAGTVGENV	121,00	9
1901	HPV	type 16 3	16	B*5102	RAGTVGENV	133,10	9
1902	HPV	type 16 3	16	A68.1	NVPDDLYIK	120,00	9
1903	HPV	type 16 3	16	Cw*0401	YFPTPSGSM	110,00	9
1904	HPV	type 16 3	16	B*5102	FPTPSGSMV	400,00	9
1905	HPV	type 16 3	16	B*5103	RAQGHNNGI	110,00	9
1906	HPV	type 16 3	16	B*5102	RAQGHNNGI	242,00	9
1907	HPV	type 16 3	16	A68.1	FVTVVDITR	300,00	9
1908	HPV	type 16 3	16	B*2705	TRSTNMSLC	200,00	9
1909	HPV	type 16 3	16	B*2705	LRHGEYDL	2000,00	9
1910	HPV	type 16 3	16	B*2705	LQFIFQLCK	1000,00	9
1911	HPV	type 16 3	16	Cw*0401	IFQLCKITL	200,00	9
1912	HPV	type 16 3	16	B*2705	LQPPPGGTL	200,00	9
1913	HPV	type 16 3	16	B*2702	YRFVTQAIA	100,00	9
1914	HPV	type 16 3	16	B*2705	YRFVTQAIA	1000,00	9
1915	HPV	type 16 3	16	A24	KYTFWEVNL	400,00	9
1916	HPV	type 16 3	16	Cw*0401	KYTFWEVNL	200,00	9
1917	HPV	type 16 3	16	Cw*0401	KFSADLDQF	200,00	9
1918	HPV	type 16 3	16	B62	DQFPLGRKF	192,00	9
1919	HPV	type 16 3	16	Cw*0401	QFPLGRKFL	200,00	9
1920	HPV	type 16 3	16	B*5102	FPLGRKFL	660,00	9
1921	HPV	type 16 3	16	B*2705	KRKATPTTS	600,00	9
1922	HPV	type 16 3	16	B8	TAKRKKRKL	320,00	9
1923	HPV	type 16 3	16	Cw*0401	VYHIFFFQMSL	330,00	10
1924	HPV	type 16 3	16	A24	VYHIFFFQMSL	200,00	10
1925	HPV	type 16 3	16	A*0201	SLWLPSEATV	577,28	10
1926	HPV	type 16 3	16	A*0201	WLPSEATVYL	540,47	10
1927	HPV	type 16 3	16	A*0201	YLPVPVSKV	735,86	10
1928	HPV	type 16 3	16	B*5102	LPPVPVSKV	242,00	10
1929	HPV	type 16 3	16	B*5201	LPPVPVSKV	435,60	10
1930	HPV	type 16 3	16	A68.1	VVSTDEYVAR	200,00	10
1931	HPV	type 16 3	16	Cw*0401	IYYHAGTSRL	200,00	10
1932	HPV	type 16 3	16	A24	IYYHAGTSRL	200,00	10
1933	HPV	type 16 3	16	Cw*0401	YYHAGTSRL	360,00	10
1934	HPV	type 16 3	16	A24	YYHAGTSRL	200,00	10
1935	HPV	type 16 3	16	B*5102	HAGTSRLAV	110,00	10
1936	HPV	type 16 3	16	B*5103	HAGTSRLAV	121,00	10
1937	HPV	type 16 3	16	B*2702	SRLAVGHFY	200,00	10
1938	HPV	type 16 3	16	B*2705	SRLAVGHFY	1000,00	10
1939	HPV	type 16 3	16	B*5102	LAVGHFYFPI	660,00	10
1940	HPV	type 16 3	16	B*5103	LAVGHFYFPI	110,00	10
1941	HPV	type 16 3	16	A68.1	AVGHFYFPIK	240,00	10
1942	HPV	type 16 3	16	A*0205	KILVPKVSGL	126,00	10
1943	HPV	type 16 3	16	B*5102	SGLQYRVFRI	528,00	10
1944	HPV	type 16 3	16	B*2705	LQYRVFRIHL	1000,00	10
1945	HPV	type 16 3	16	B*2705	FRIHLPDENK	2000,00	10

1946	HPV	type 16 3	16	Cw*0401	SFYNPDTQRL	200,00	10
1947	HPV	type 16 3	16	B*2705	QRLVWACVGV	600,00	10
1948	HPV	type 16 3	16	B*2705	GRGQPLGVGI	600,00	10
1949	HPV	type 16 3	16	B*5102	NAGVDNRECI	242,00	10
1950	HPV	type 16 3	16	B*5103	NAGVDNRECI	121,00	10
1951	HPV	type 16 3	16	B*2705	NRECISMDYK	2000,00	10
1952	HPV	type 16 3	16	B7	NPGDCPPLEL	120,00	10
1953	HPV	type 16 3	16	B*5102	NPGDCPPLEL	100,00	10
1954	HPV	type 16 3	16	B*5102	CPPLELINTV	266,20	10
1955	HPV	type 16 3	16	B*5102	PPELINTVI	145,20	10
1956	HPV	type 16 3	16	Cw*0401	GFGAMDFCTL	200,00	10
1957	HPV	type 16 3	16	B*2705	LQANKSEVPL	200,00	10
1958	HPV	type 16 3	16	A1	VSEPYGDSL	135,00	10
1959	HPV	type 16 3	16	Cw*0401	LFYLRREQM	110,00	10
1960	HPV	type 16 3	16	Cw*0401	FFYLRREQM	110,00	10
1961	HPV	type 16 3	16	B*2705	LRREQMFVRH	200,00	10
1962	HPV	type 16 3	16	B*2705	RREQMFVRHL	1800,00	10
1963	HPV	type 16 3	16	B*2705	QMFVRHLFNR	125,00	10
1964	HPV	type 16 3	16	B*2705	VRHLFNRAGT	200,00	10
1965	HPV	type 16 3	16	B*2705	NRAGTVGENV	600,00	10
1966	HPV	type 16 3	16	Cw*0401	NYFFPTSGSM	132,00	10
1967	HPV	type 16 3	16	B*2705	AQIFNKPYWL	200,00	10
1968	HPV	type 16 3	16	B*2705	QRAQGHNGI	600,00	10
1969	HPV	type 16 3	16	B*2705	TRSTNMSLCA	200,00	10
1970	HPV	type 16 3	16	B*2705	KEYLRHGEEY	225,00	10
1971	HPV	type 16 3	16	Cw*0401	EYDLQFIFQL	600,00	10
1972	HPV	type 16 3	16	A24	EYDLQFIFQL	200,00	10
1973	HPV	type 16 3	16	B*2705	LQFIFQLCKI	300,00	10
1974	HPV	type 16 3	16	A*0201	TLTADVMTYI	131,97	10
1975	HPV	type 16 3	16	A*0201	TILEDWNFG	258,44	10
1976	HPV	type 16 3	16	B*2702	YRFVTQAIAC	100,00	10
1977	HPV	type 16 3	16	B*2705	YRFVTQAIAC	1000,00	10
1978	HPV	type 16 3	16	A68.1	FVTQAIACQK	120,00	10
1979	HPV	type 16 3	16	B*2705	CQKHTPPAK	200,00	10
1980	HPV	type 16 3	16	Cw*0401	QFPLGRKFL	220,00	10
1981	HPV	type 16 3	16	B*2705	GRKFLQAGL	2000,00	10
1982	HPV	type 16 3	16	B*2705	KRKATPTTSS	600,00	10
1983	HPV	type 16 3	17	B*2705	KLYVCLYV	135,00	8
1984	HPV	type 16 3	17	B*2705	CLYVWYK	150,00	8
1985	HPV	type 16 3	17	A3	CLYVLVNIK	300,00	9
1986	HPV	type 16 3	17	B*2705	CLYVLVNIK	150,00	9
1987	HPV	type 16 3	17	A24	LYVLVNIK	462,00	9
1988	HPV	type 16 3	17	Cw*0401	LYVLVNIK	220,00	9
1989	HPV	type 16 3	17	A*0201	VLVNIKLYV	650,31	9
1990	HPV	type 16 3	17	Cw*0301	VNIKLYVCL	100,00	9
1991	HPV	type 16 3	17	B*2705	CLYVLVNIK	150,00	10
1992	HPV	type 16 3	17	A*0201	YVLVNIKLYV	569,69	10
1993	HPV	type 16 3	17	B*2705	KLYVCLYVWY	225,00	10
1994	HPV	type 16 3	17	A68.1	YVCLYVWYK	120,00	10
1995	HPV	type 16 3	17	A*0201	CLYVWYKHY	222,57	10
1996	HPV	type 16 3	17	Cw*0401	WYNKHVCMCF	100,00	10
1997	HPV	type 16 3	17	A24	WYNKHVCMCF	210,00	10
1998	HPV	type 16 3	18	Cw*0301	FGLHIYKQL	120,00	9
1999	HPV	type 16 3	18	B*5102	FGLHIYKQL	145,20	9
2000	HPV	type 16 3	18	A68.1	KVSHTLFICK	120,00	10
2001	HPV	type 16 3	18	B*2705	VQTDGFLHIY	100,00	10
2002	HPV	type 16 3	18	B62	VQTDGFLHIY	176,00	10
2003	HPV	type 16 3	18	A1	QTDGFLHIYK	125,00	10
2004	HPV	type 16 3	18	Cw*0401	DFGLHIYKQL	200,00	10
2005	HPV	type 16 3	18	B*5102	FGLHIYKQLI	580,80	10
2006	HPV	type 16 4	1	B*5102	LGYPKPIST	484,00	8
2007	HPV	type 16 4	1	B*5201	LGYPKPIST	225,00	9
2008	HPV	type 16 4	2	B*5102	GNQPLCI	440,00	8
2009	HPV	type 16 4	2	B*5102	QPLCIWII	1200,00	8
2010	HPV	type 16 4	2	A24	TYTGNQPL	240,00	9
2011	HPV	type 16 4	2	Cw*0401	TYTGNQPL	200,00	9
2012	HPV	type 16 4	2	B*5201	NQPLCIWII	240,00	9
2013	HPV	type 16 4	2	B*5102	GNQPLCIWII	440,00	10
2014	HPV	type 16 4	2	B*2705	NQPLCIWIIK	200,00	10
2015	HPV	type 16 4	3	A*0201	MVNVYVVFV	130,88	9
2016	HPV	type 16 4	3	A*0201	NMVNVYVVFV	635,43	10
2017	HPV	type 16 4	4	B*2705	HQKELLYL	200,00	8
2018	HPV	type 16 4	4	B*2705	LQEYNLIK	200,00	8
2019	HPV	type 16 4	4	B*2705	KEYCMHHQK	450,00	9
2020	HPV	type 16 4	4	B*3901	HHQKELLYL	135,00	9
2021	HPV	type 16 4	4	A*0201	LLYLQEYNL	116,21	9
2022	HPV	type 16 4	4	B*2705	LLYLQEYNL	150,00	9
2023	HPV	type 16 4	4	A3	YLQEYNLIK	180,00	9
2024	HPV	type 16 4	4	Cw*0401	EYCMHHQKEL	220,00	10
2025	HPV	type 16 4	4	A24	EYCMHHQKEL	220,00	10
2026	HPV	type 16 4	4	B*3901	MHHQKELLYL	135,00	10
2027	HPV	type 16 4	4	A*0201	YLQEYNLIK	215,50	10
2028	HPV	type 16 4	6	B*2705	QLYPKSQDL	150,00	9
2029	HPV	type 16 4	6	Cw*0301	QLYPKSQDL	120,00	9
2030	HPV	type 16 4	6	B*5102	YPKSQDLEL	110,00	9
2031	HPV	type 16 4	6	B*2705	KQLYPKSQDL	600,00	10
2032	HPV	type 16 4	6	Cw*0401	LYPKSQDLEL	200,00	10
2033	HPV	type 16 4	6	A24	LYPKSQDLEL	330,00	10
2034	HPV	type 16 4	6	B*3501	YPKSQDLELY	180,00	10
2035	HPV	type 16 4	9	B*2705	GEWKVQML	150,00	8



2036	HPV	type 16 4	9	A*0201	LIHLGEWKV	121,93	9
2037	HPV	type 16 4	10	B*5102	KGVLQEQV	159,72	8
2038	HPV	type 16 4	11	B*2705	VRLYPTLF	1000,00	8
2039	HPV	type 16 4	11	B*5102	YPTLFQFL	242,00	8
2040	HPV	type 16 4	11	B*2705	FQFLTHQK	1000,00	8
2041	HPV	type 16 4	11	B*2705	HQKIHPYF	100,00	8
2042	HPV	type 16 4	11	B*5102	HPYFHIVI	2200,00	8
2043	HPV	type 16 4	11	B*5102	FPMEYTQCV	532,40	9
2044	HPV	type 16 4	11	B*2705	MEYTQCVRL	150,00	9
2045	HPV	type 16 4	11	B60	MEYTQCVRL	352,00	9
2046	HPV	type 16 4	11	Cw*0301	QCVRLYPTL	180,00	9
2047	HPV	type 16 4	11	B*2705	RLYPTLFQF	225,00	9
2048	HPV	type 16 4	11	A24	LYPTLFQFL	518,40	9
2049	HPV	type 16 4	11	Cw*0401	LYPTLFQFL	200,00	9
2050	HPV	type 16 4	11	B*2705	FQFLTHQKI	300,00	9
2051	HPV	type 16 4	11	B*5102	FQFLTHQKI	106,48	9
2052	HPV	type 16 4	11	B*5201	HPYFHIVIF	125,00	9
2053	HPV	type 16 4	11	B*2705	TQCVRLYPTL	200,00	10
2054	HPV	type 16 4	11	B*2702	VRLYPTLFQF	200,00	10
2055	HPV	type 16 4	11	B*2705	VRLYPTLFQF	1000,00	10
2056	HPV	type 16 4	11	A*0201	RLYPTLFQFL	714,36	10
2057	HPV	type 16 4	11	B*2705	RLYPTLFQFL	450,00	10
2058	HPV	type 16 4	11	Cw*0301	RLYPTLFQFL	600,00	10
2059	HPV	type 16 4	11	A3	TLFQFLTHQK	100,00	10
2060	HPV	type 16 4	11	B*2705	TLFQFLTHQK	150,00	10
2061	HPV	type 16 4	11	B*5102	HPYFHIVIFV	1000,00	10
2062	HPV	type 16 4	11	B*5103	HPYFHIVIFV	120,00	10
2063	HPV	type 16 4	11	B*5201	HPYFHIVIFV	150,00	10
2064	HPV	type 16 4	12	B*5102	LPVCMFYKV	1200,00	9
2065	HPV	type 16 4	13	A*0201	LLLSTIVIFI	150,93	10
2066	HPV	type 16 4	14	B*5102	NAVRIGAL	165,00	8
2067	HPV	type 16 4	14	B*2705	VRIGALST	200,00	8
2068	HPV	type 16 4	14	B*5102	GALSTESL	165,00	8
2069	HPV	type 16 4	14	B*5102	FPVSGSDL	660,00	8
2070	HPV	type 16 4	14	B*2705	GRWIVVCV	3000,00	8
2071	HPV	type 16 4	14	B*5102	VPKATALV	110,00	8
2072	HPV	type 16 4	14	B*5102	KATALVWV	100,00	8
2073	HPV	type 16 4	14	B*5102	LAKCLII	100,00	8
2074	HPV	type 16 4	14	Cw*0401	GFVSGSDL	200,00	9
2075	HPV	type 16 4	14	B*5801	VSGSDLGRW	105,60	9
2076	HPV	type 16 4	14	B*2705	GRWIVVCVS	1000,00	9
2077	HPV	type 16 4	14	A*0201	WIVVCVSSV	101,18	9
2078	HPV	type 16 4	14	A68.1	VVCVSSVPK	120,00	9
2079	HPV	type 16 4	14	Cw*0301	SSVPKATAL	100,00	9
2080	HPV	type 16 4	14	A68.1	WVAAGWLAK	240,00	9
2081	HPV	type 16 4	14	B*5102	AGWLAKCCL	110,00	9
2082	HPV	type 16 4	14	B*2705	VRIGALSTES	200,00	10
2083	HPV	type 16 4	14	A*0201	NLVVWQGFPV	403,40	10
2084	HPV	type 16 4	14	B*5102	QGFVSGSDL	100,00	10
2085	HPV	type 16 4	14	B*2705	GRWIVVCVSS	1000,00	10
2086	HPV	type 16 4	14	A68.1	IVVCVSSVPK	240,00	10
2087	HPV	type 16 4	14	B*5102	VPKATALVWV	100,00	10
2088	HPV	type 16 4	14	B*5102	AGWLAKCCLI	440,00	10
2089	HPV	type 16 4	15	B*5102	TPSTTIL	121,00	8
2090	HPV	type 16 4	15	B*5801	TSTTILTTW	158,40	9
2091	HPV	type 16 4	15	A*0201	ILTTWCFSL	210,63	9
2092	HPV	type 16 4	15	B*5102	TATPTSTTI	266,20	10
2093	HPV	type 16 4	15	B*5103	TATPTSTTI	121,00	10
2094	HPV	type 16 4	15	Cw*0401	CFSLMAFFYL	220,00	10
2095	HPV	type 16 4	16	Cw*0401	HFSIALPAVF	120,00	10
2096	HPV	type 16 4	18	B*5103	SACFAGPSI	110,00	9
2097	HPV	type 16 4	18	B*5102	SACFAGPSI	200,00	9
2098	HPV	type 16 4	19	B*5102	APVGPEL	330,00	8
2099	HPV	type 16 4	19	A*0201	CITVVTFWV	305,07	9
2100	HPV	type 16 4	2	B*2705	MQPNSVEATK	200,00	10
2101	HPV	type 16 4	2	B*5801	NSVEATKWAW	160,00	10
2102	HPV	type 16 4	2	A68.1	SVEATKWAWR	200,00	10
2103	HPV	type 16 4	3	B*5102	LGYPKISIF	484,00	8
2104	HPV	type 16 4	3	B*5201	LGYPKISIF	225,00	9
2105	HPV	type 16 4	8	B*2705	IRAYNLRY	300,00	8
2106	HPV	type 16 4	8	B*2705	RRQVDSGL	6000,00	8
2107	HPV	type 16 4	8	B*2705	TRQPKRHL	2000,00	8
2108	HPV	type 16 4	8	B*2705	RQPKRHLK	600,00	8
2109	HPV	type 16 4	8	B*2705	KRHLKKNM	1800,00	8
2110	HPV	type 16 4	8	A24	IYVCACNIF	180,00	9
2111	HPV	type 16 4	8	Cw*0401	IYVCACNIF	110,00	9
2112	HPV	type 16 4	8	B14	LRYWDRRQV	100,00	9
2113	HPV	type 16 4	8	B*2705	LRYWDRRQV	900,00	9
2114	HPV	type 16 4	8	B*2705	DRRQVDSGL	200,00	9
2115	HPV	type 16 4	8	B*2705	RRQVDSGLT	600,00	9
2116	HPV	type 16 4	8	B*2705	RQVDSGLTR	300,00	9
2117	HPV	type 16 4	8	B*2705	TRQPKRHLK	2000,00	9
2118	HPV	type 16 4	8	B*2705	RQPKRHLKK	600,00	9
2119	HPV	type 16 4	8	B*2705	KRHLKKNMV	1800,00	9
2120	HPV	type 16 4	8	A*0201	MNVVYVVFV	130,88	9
2121	HPV	type 16 4	8	A68.1	IYVCACNIFIR	200,00	10
2122	HPV	type 16 4	8	B*2705	LRYWDRRQVD	100,00	10
2123	HPV	type 16 4	8	B*2705	RRQVDSGLTR	3000,00	10
2124	HPV	type 16 4	8	B*2705	TRQPKRHLKK	2000,00	10
2125	HPV	type 16 4	8	B*3501	QPKRHLKKNM	120,00	10

2126	HPV	type 16 4	8	B*2705	KRHLKKNMVN	600,00	10
2127	HPV	type 16 4	8	B62	HLKKNMVNVY	132,00	10
2128	HPV	type 16 4	8	A*0201	NMVNVYVVFV	635,43	10
2129	HPV	type 16 4	10	B*2705	HQKELLYL	200,00	8
2130	HPV	type 16 4	10	B*2705	LQEYNLIK	200,00	8
2131	HPV	type 16 4	10	B*3901	HHQKELLYL	135,00	9
2132	HPV	type 16 4	10	A*0201	LLYLQEYNL	116,21	9
2133	HPV	type 16 4	10	B*2705	LLYLQEYNL	150,00	9
2134	HPV	type 16 4	10	A3	YLQEYNLIK	180,00	9
2135	HPV	type 16 4	10	B*3901	MHHQKELLYL	135,00	10
2136	HPV	type 16 4	10	A*0201	YLQEYNLIK	215,50	10
2137	HPV	type 16 4	11	B*2705	QLYPKSQDL	150,00	9
2138	HPV	type 16 4	11	Cw*0301	QLYPKSQDL	120,00	9
2139	HPV	type 16 4	11	B*5102	YPKSQDLEL	110,00	9
2140	HPV	type 16 4	11	B*2705	KQLYPKSQDL	600,00	10
2141	HPV	type 16 4	11	Cw*0401	LYPKSQDLEL	200,00	10
2142	HPV	type 16 4	11	A24	LYPKSQDLEL	330,00	10
2143	HPV	type 16 4	11	B*3501	YPKSQDLELY	180,00	10
2144	HPV	type 16 4	12	Cw*0401	YYPHLYLHM	110,00	9
2145	HPV	type 16 4	12	Cw*0301	MYYPHLYLHM	125,00	10
2146	HPV	type 16 4	12	Cw*0401	MYYPHLYLHM	132,00	10
2147	HPV	type 16 4	12	Cw*0401	LYLHMQDYHM	110,00	10
2148	HPV	type 16 4	13	B*2705	VRLYPTLF	1000,00	8
2149	HPV	type 16 4	13	B*5102	YPTLFQFL	242,00	8
2150	HPV	type 16 4	13	B*2705	FQFLTHQK	1000,00	8
2151	HPV	type 16 4	13	B*2705	HQKTHPYF	100,00	8
2152	HPV	type 16 4	13	B*5102	HPYFHIVI	2200,00	8
2153	HPV	type 16 4	13	B*2705	MEYTCQVRL	150,00	9
2154	HPV	type 16 4	13	B60	MEYTCQVRL	352,00	9
2155	HPV	type 16 4	13	Cw*0301	QCVRLYPTL	180,00	9
2156	HPV	type 16 4	13	B*2705	RLYPTLFQF	225,00	9
2157	HPV	type 16 4	13	A24	LYPTLFQFL	518,40	9
2158	HPV	type 16 4	13	Cw*0401	LYPTLFQFL	200,00	9
2159	HPV	type 16 4	13	B*2705	FQFLTHQKI	300,00	9
2160	HPV	type 16 4	13	B*5102	FQFLTHQKI	106,48	9
2161	HPV	type 16 4	13	B*5201	HPYFHIVIF	125,00	9
2162	HPV	type 16 4	13	B*2705	TQCVRLYPTL	200,00	10
2163	HPV	type 16 4	13	B*2702	VRLYPTLFQF	200,00	10
2164	HPV	type 16 4	13	B*2705	VRLYPTLFQF	1000,00	10
2165	HPV	type 16 4	13	A*0201	RLYPTLFQFL	714,36	10
2166	HPV	type 16 4	13	B*2705	RLYPTLFQFL	450,00	10
2167	HPV	type 16 4	13	Cw*0301	RLYPTLFQFL	600,00	10
2168	HPV	type 16 4	13	A3	TLFQFLTHQK	100,00	10
2169	HPV	type 16 4	13	B*2705	TLFQFLTHQK	150,00	10
2170	HPV	type 16 4	13	B*5102	HPYFHIVIFV	1000,00	10
2171	HPV	type 16 4	13	B*5103	HPYFHIVIFV	120,00	10
2172	HPV	type 16 4	13	B*5201	HPYFHIVIFV	150,00	10
2173	HPV	type 16 4	14	B*5102	LPVCMFYKV	1200,00	9
2174	HPV	type 16 4	14	A*0201	YLPVCMFYKV	607,88	10
2175	HPV	type 16 4	15	B*2705	LQNVCVALL	200,00	8
2176	HPV	type 16 4	15	B*2705	LQNVCVALL	200,00	9
2177	HPV	type 16 4	15	B*5102	VALLSNNSL	181,50	9
2178	HPV	type 16 4	15	A*0201	VLCVLQNVCV	118,24	10
2179	HPV	type 16 4	15	B*5102	VALLSNNSL	199,65	10
2180	HPV	type 16 4	15	B*2705	KQTNKKKNYI	180,00	10
2181	HPV	type 16 4	16	B*2705	IRPLCELL	2000,00	8
2182	HPV	type 16 4	16	B*5102	NAVRIGAL	165,00	8
2183	HPV	type 16 4	16	B*2705	VRIGALST	200,00	8
2184	HPV	type 16 4	16	B*5102	GALSTESL	165,00	8
2185	HPV	type 16 4	16	B*5102	FPVSGSDL	660,00	8
2186	HPV	type 16 4	16	B*2705	GRWIVVCV	3000,00	8
2187	HPV	type 16 4	16	B*5102	VPKATALV	110,00	8
2188	HPV	type 16 4	16	B*5102	KATALVWV	100,00	8
2189	HPV	type 16 4	16	B*5102	LAKCCLII	100,00	8
2190	HPV	type 16 4	16	A68.1	VVLLQLIR	400,00	9
2191	HPV	type 16 4	16	B*2705	IRPLCELLN	200,00	9
2192	HPV	type 16 4	16	Cw*0401	GFPVSGSDL	200,00	9
2193	HPV	type 16 4	16	B*5801	VSGSDLGRW	105,60	9
2194	HPV	type 16 4	16	B*2705	GRWIVCVS	1000,00	9
2195	HPV	type 16 4	16	A*0201	WIVVCVSSV	101,18	9
2196	HPV	type 16 4	16	A68.1	VVCVSSVPK	120,00	9
2197	HPV	type 16 4	16	Cw*0301	SSVPKATAL	100,00	9
2198	HPV	type 16 4	16	A68.1	WVAAGWLAK	240,00	9
2199	HPV	type 16 4	16	B*5102	AGWLAKCCL	110,00	9
2200	HPV	type 16 4	16	B*5102	MGVLLQLIR	264,00	10
2201	HPV	type 16 4	16	A68.1	GVVLLQLIR	400,00	10
2202	HPV	type 16 4	16	B*2705	LQLIRPLCEL	200,00	10
2203	HPV	type 16 4	16	B*2705	IRPLCELLNA	200,00	10
2204	HPV	type 16 4	16	B*5102	RPLCELLNAV	600,00	10
2205	HPV	type 16 4	16	B*2705	VRIGALSTES	200,00	10
2206	HPV	type 16 4	16	A*0201	NLVVWQGFV	403,40	10
2207	HPV	type 16 4	16	B*5102	QGFPVSGSDL	100,00	10
2208	HPV	type 16 4	16	B*2705	GRWIVVCVSS	1000,00	10
2209	HPV	type 16 4	16	A68.1	IVVCVSSVPK	240,00	10
2210	HPV	type 16 4	16	B*5102	VPKATALVWV	100,00	10
2211	HPV	type 16 4	16	B*5102	AGWLAKCCLI	440,00	10
2212	HPV	type 16 4	17	B*2705	SRLTSCNV	600,00	8
2213	HPV	type 16 4	17	B*5102	SPSNCSTTV	266,20	9
2214	HPV	type 16 4	17	B*5102	YPCFFTHPV	440,00	9
2215	HPV	type 16 4	17	B*5102	GAVKYTSRL	363,00	9

2216	HPV	type 16 4	17	B*2705	SRLTSCNVH	200,00	9
2217	HPV	type 16 4	17	Cw*0401	HFSLLYCEL	200,00	9
2218	HPV	type 16 4	17	A*0201	SLLYCELYI	212,31	9
2219	HPV	type 16 4	17	A*0201	LLYCELYIV	356,80	9
2220	HPV	type 16 4	17	A*0201	ALFFDTASV	257,34	9
2221	HPV	type 16 4	17	B*2702	SRLTSCNVHF	200,00	10
2222	HPV	type 16 4	17	B*2705	SRLTSCNVHF	1000,00	10
2223	HPV	type 16 4	17	B*3901	VHFSLLYCEL	180,00	10
2224	HPV	type 16 4	17	A*0201	SLLYCELYIV	242,67	10
2225	HPV	type 16 4	17	B*5102	NALFFDTASV	330,00	10
2226	HPV	type 16 4	17	B*5103	NALFFDTASV	132,00	10
2227	HPV	type 16 4	18	B*2705	FRIYKTTY	1000,00	8
2228	HPV	type 16 4	18	B*2705	YRPLQKFH	200,00	8
2229	HPV	type 16 4	18	B*2705	FRIYKTTYR	1000,00	9
2230	HPV	type 16 4	18	A24	IYKTTYRPL	200,00	9
2231	HPV	type 16 4	18	Cw*0401	IYKTTYRPL	200,00	9
2232	HPV	type 16 4	18	B*2705	KTYRPLQK	150,00	9
2233	HPV	type 16 4	18	A24	TYRPLQKF	132,00	9
2234	HPV	type 16 4	18	Cw*0401	TYRPLQKF	220,00	9
2235	HPV	type 16 4	18	Cw*0301	RIYKTTYRPL	100,00	10
2236	HPV	type 16 4	18	B*5801	KTYRPLQKF	158,40	10
2237	HPV	type 16 4	20	B*2705	NRSSKVRM	180,00	8
2238	HPV	type 16 4	20	B*2705	VRMSTCVL	2000,00	8
2239	HPV	type 16 4	20	B*2705	NRSVESH	2000,00	8
2240	HPV	type 16 4	20	B*2705	LQQKVTL	200,00	8
2241	HPV	type 16 4	20	A68.1	SVPINRSSK	120,00	9
2242	HPV	type 16 4	20	B*5102	VPINRSSKV	1320,00	9
2243	HPV	type 16 4	20	B7	KVRMSTCVL	200,00	9
2244	HPV	type 16 4	20	B*2705	VRMSTCVLC	200,00	9
2245	HPV	type 16 4	20	A68.1	SVESHLLQK	120,00	9
2246	HPV	type 16 4	20	A68.1	HTIPSVPINR	150,00	10
2247	HPV	type 16 4	20	B*2705	NRSSKVRMST	200,00	10
2248	HPV	type 16 4	20	B*2705	VRMSTCVLCT	200,00	10
2249	HPV	type 16 4	20	B*3901	SHLQQKVTL	270,00	10
2250	HPV	type 16 4	21	B*5102	AGFLYVFL	110,00	8
2251	HPV	type 16 4	21	B*2705	DRSTDPLY	100,00	8
2252	HPV	type 16 4	21	B*5102	FAFLQDTV	1210,00	8
2253	HPV	type 16 4	21	A*0201	MITAGFLYV	169,89	9
2254	HPV	type 16 4	21	B*5801	ITAGFLYVF	118,80	9
2255	HPV	type 16 4	21	A*0201	FLYVFLMIC	262,05	9
2256	HPV	type 16 4	21	A68.1	YVFLMICNK	240,00	9
2257	HPV	type 16 4	21	B*2705	DRSTDPLY	100,00	9
2258	HPV	type 16 4	21	A*0201	GIFAFCDPV	134,46	9
2259	HPV	type 16 4	21	Cw*0401	IFAFCDPVF	100,00	9
2260	HPV	type 16 4	21	Cw*0401	AFCDPVFAF	240,00	9
2261	HPV	type 16 4	21	Cw*0401	AFQDTVAF	100,00	9
2262	HPV	type 16 4	21	B*5102	AGFLYVFLMI	484,00	10
2263	HPV	type 16 4	21	B*5201	AGFLYVFLMI	180,00	10
2264	HPV	type 16 4	21	A*0201	FLMICNKTYI	976,61	10
2265	HPV	type 16 4	21	Cw*0401	TYIDRSTDPL	240,00	10
2266	HPV	type 16 4	21	A24	TYIDRSTDPL	360,00	10
2267	HPV	type 16 4	21	A1	STDPLYYGIF	125,00	10
2268	HPV	type 16 4	21	B*5102	YGIFAFCDPV	240,00	10
2269	HPV	type 16 4	21	Cw*0401	AFCDPVFAFL	288,00	10
2270	HPV	type 16 4	23	B*5102	NPEKQSHI	242,00	8
2271	HPV	type 16 4	23	B*2705	KQSHIPIHV	180,00	8
2272	HPV	type 16 4	23	B*5102	IPHVAVTV	200,00	8
2273	HPV	type 16 4	23	B*5103	VACSTHILI	110,00	9
2274	HPV	type 16 4	23	B*5102	VACSTHILI	220,00	9
2275	HPV	type 16 4	23	B*2705	KQSHIPIHVAV	180,00	10
2276	HPV	type 16 5	1	B*2705	LRVSTTV	600,00	8
2277	HPV	type 16 5	1	B*5102	LPQOMPLL	110,00	8
2278	HPV	type 16 5	1	B*2705	LRVSTTVT	200,00	9
2279	HPV	type 16 5	1	B*5801	VSTTVINSW	132,00	9
2280	HPV	type 16 5	1	Cw*0301	SWLPQQMPL	120,00	9
2281	HPV	type 16 5	1	A*0201	WLPQQMELL	226,01	9
2282	HPV	type 16 5	1	B*2705	LRVSTTVTN	200,00	10
2283	HPV	type 16 5	1	Cw*0301	SWLPQQMPLL	200,00	10
2284	HPV	type 16 5	2	B*5102	FAVDPEPL	300,00	8
2285	HPV	type 16 5	2	B*5102	SPTVPALL	100,00	8
2286	HPV	type 16 5	2	Cw*0401	KFAVDPEPL	200,00	9
2287	HPV	type 16 5	2	A1	AVDPEPLMY	1250,00	9
2288	HPV	type 16 5	2	B*2705	LMYKSSGTF	125,00	9
2289	HPV	type 16 5	2	Cw*0401	TFSPTVPAL	576,00	9
2290	HPV	type 16 5	2	B*5102	VPALLNKCL	133,10	9
2291	HPV	type 16 5	2	Cw*0401	KFAVDPEPLM	100,00	10
2292	HPV	type 16 5	2	A1	AVDPEPLMYK	500,00	10
2293	HPV	type 16 5	2	A68.1	AVDPEPLMYK	180,00	10
2294	HPV	type 16 5	2	Cw*0401	TFSPTVPALL	288,00	10
2295	HPV	type 16 5	3	B*5102	SPYGSDTI	2200,00	8
2296	HPV	type 16 5	3	B*5102	YGSDTILI	193,60	8
2297	HPV	type 16 5	3	B*5102	SPYGSDTIL	550,00	9
2298	HPV	type 16 5	3	B*5102	SPYGSDTILI	2420,00	10
2299	HPV	type 16 5	3	B*5103	SPYGSDTILI	145,20	10
2300	HPV	type 16 5	4	B*5102	NPDTLGTNI	220,00	9
2301	HPV	type 16 5	4	A*0201	ILLLLGFLI	380,61	9
2302	HPV	type 16 5	4	A3	LLLLGFLIGK	405,00	9
2303	HPV	type 16 5	4	Cw*0401	NPDTLGTNIL	120,00	10
2304	HPV	type 16 5	4	A3	LLLLGFLIGK	270,00	10
2305	HPV	type 16 5	5	B*2705	YRWVSESG	100,00	8

2306	HPV	type 16	5	5	B*2705	LQYRWVSES	100,00	9
2307	HPV	type 16	5	5	B*2702	YRWVSESGI	300,00	9
2308	HPV	type 16	5	5	B*2705	YRWVSESGI	3000,00	9
2309	HPV	type 16	5	5	B*2702	YRWVSESGII	300,00	10
2310	HPV	type 16	5	5	B*2705	YRWVSESGII	3000,00	10
2311	HPV	type 16	5	6	B*2705	SRCTFCAF	1000,00	8
2312	HPV	type 16	5	6	B*5102	CAFCTFV	550,00	8
2313	HPV	type 16	5	6	B*2705	CRTFVSHC	200,00	8
2314	HPV	type 16	5	6	B*2705	SRCTFCAF	200,00	9
2315	HPV	type 16	5	6	Cw*0401	TFCFCTF	100,00	9
2316	HPV	type 16	5	6	A*0201	KLGSRCFCA	100,85	10
2317	HPV	type 16	5	6	B*2705	SRCTFCAFCR	1000,00	10
2318	HPV	type 16	5	7	B*2705	LQYTMVNA	100,00	8
2319	HPV	type 16	5	7	B*2702	LQYTMVNAF	100,00	9
2320	HPV	type 16	5	7	B*2705	LQYTMVNAF	500,00	9
2321	HPV	type 16	5	9	B*5102	NALVCICL	165,00	8
2322	HPV	type 16	5	9	B*3901	LHQ TALPL	135,00	8
2323	HPV	type 16	5	9	B*2705	HQ TALPLY	100,00	8
2324	HPV	type 16	5	9	B*3901	IHVFLYIL	180,00	8
2325	HPV	type 16	5	9	A*0201	MLLHKYIYV	3609,23	9
2326	HPV	type 16	5	9	B*5103	TALPLYIHV	132,00	9
2327	HPV	type 16	5	9	B*5102	TALPLYIHV	300,00	9
2328	HPV	type 16	5	9	B*5102	LPLYIHVFL	300,00	9
2329	HPV	type 16	5	9	A24	LYIHVFLYI	126,00	9
2330	HPV	type 16	5	9	B*3901	IHVFLYILL	180,00	9
2331	HPV	type 16	5	9	Cw*0301	IHVFLYILL	100,00	9
2332	HPV	type 16	5	9	A*0201	FLYILLVQL	723,25	9
2333	HPV	type 16	5	9	A*0205	FLYILLVQL	126,00	9
2334	HPV	type 16	5	9	B*2705	FLYILLVQL	150,00	9
2335	HPV	type 16	5	9	A*0201	ILLVQLNTL	309,05	9
2336	HPV	type 16	5	9	A*0201	LMMLHKYIYV	2606,66	10
2337	HPV	type 16	5	9	Cw*0301	IYVSSLYNAL	100,00	10
2338	HPV	type 16	5	9	Cw*0401	IYVSSLYNAL	200,00	10
2339	HPV	type 16	5	9	A24	IYVSSLYNAL	432,00	10
2340	HPV	type 16	5	9	Cw*0401	LYNALYCICL	200,00	10
2341	HPV	type 16	5	9	A24	LYNALYCICL	300,00	10
2342	HPV	type 16	5	9	A*0201	ALPLYIHVFL	117,49	10
2343	HPV	type 16	5	9	Cw*0401	LYIHVFLYIL	400,00	10
2344	HPV	type 16	5	9	A24	LYIHVFLYIL	300,00	10
2345	HPV	type 16	5	9	Cw*0401	VFLYILLVQL	400,00	10
2346	HPV	type 16	5	9	A*0201	YILLVQLNTL	114,98	10
2347	HPV	type 16	5	9	A*0205	YILLVQLNTL	126,00	10
2348	HPV	type 16	5	10	B*5102	CPDTHLV	110,00	8
2349	HPV	type 16	5	10	B*2705	FQFLSLSS	100,00	8
2350	HPV	type 16	5	10	A24	LYYHFHNVL	240,00	9
2351	HPV	type 16	5	10	Cw*0401	LYYHFHNVL	200,00	9
2352	HPV	type 16	5	10	B60	LEKKDFQFL	160,00	9
2353	HPV	type 16	5	10	B*2702	FQFLSLSSY	100,00	9
2354	HPV	type 16	5	10	B*2705	FQFLSLSSY	500,00	9
2355	HPV	type 16	5	10	Cw*0401	YYHFHNVLV	300,00	10
2356	HPV	type 16	5	10	A24	YYHFHNVLV	100,00	10
2357	HPV	type 16	5	10	A3	KINLDHVLEK	360,00	10
2358	HPV	type 16	5	10	B*2705	FQFLSLSSYT	100,00	10
2359	HPV	type 16	5	10	B*5102	FPSSNGNSL	1100,00	10
2360	HPV	type 16	5	10	A68.1	NVNTTNLLCK	120,00	10
2361	HPV	type 16	5	11	B*2705	HQSQHVDL	200,00	8
2362	HPV	type 16	5	11	B*2705	SQHV DLLL	200,00	8
2363	HPV	type 16	5	11	B*3901	QHVDLLLL	540,00	8
2364	HPV	type 16	5	11	B*5102	IAAFALLV	100,00	8
2365	HPV	type 16	5	11	B*3901	WHIVCLSL	270,00	8
2366	HPV	type 16	5	11	B*5102	TPSPPLPL	100,00	8
2367	HPV	type 16	5	11	B*5102	LGVS PNAAI	264,00	9
2368	HPV	type 16	5	11	B*5103	AAIHQSQHV	110,00	9
2369	HPV	type 16	5	11	B*5102	AAIHQSQHV	399,30	9
2370	HPV	type 16	5	11	B*2705	HQSQHV DLL	200,00	9
2371	HPV	type 16	5	11	B*2705	SQHV DLLLL	200,00	9
2372	HPV	type 16	5	11	B*5102	NGLTNSEKL	159,72	9
2373	HPV	type 16	5	11	Cw*0301	EKLTPYNSL	100,00	9
2374	HPV	type 16	5	11	B*5102	FANIAAFAL	100,00	9
2375	HPV	type 16	5	11	Cw*0301	ANIAAFALL	100,00	9
2376	HPV	type 16	5	11	A*0201	LLVFSTFKI	102,87	9
2377	HPV	type 16	5	11	B7	TPSPPLPL	120,00	9
2378	HPV	type 16	5	11	Cw*0401	TPSPPLPL	192,00	9
2379	HPV	type 16	5	11	B*5102	TPSPPLPL	100,00	9
2380	HPV	type 16	5	11	B*5102	NAAIHQSQHV	121,00	10
2381	HPV	type 16	5	11	B*5103	NAAIHQSQHV	110,00	10
2382	HPV	type 16	5	11	B*3901	IHQSQHV DLL	135,00	10
2383	HPV	type 16	5	11	B*2705	HQSQHV DLLL	200,00	10
2384	HPV	type 16	5	11	B60	SEKLTPYNSL	160,00	10
2385	HPV	type 16	5	11	Cw*0401	NFANIAAFAL	220,00	10
2386	HPV	type 16	5	11	B*5102	FANIAAFALL	100,00	10
2387	HPV	type 16	5	11	Cw*0401	AFALLVFSTF	100,00	10
2388	HPV	type 16	5	11	A*0201	ALLVFSTFKI	223,89	10
2389	HPV	type 16	5	11	A*0201	LVFSTFKIFV	800,05	10
2390	HPV	type 16	5	11	A*0201	KIFVSGVWHI	320,45	10
2391	HPV	type 16	5	12	B*5102	QPPPLPPL	100,00	8
2392	HPV	type 16	5	12	B*2705	LQPPPLPPL	200,00	9
2393	HPV	type 16	5	12	B*2705	LQPPPLPPLY	100,00	10
2394	HPV	type 16	5	12	B62	LQPPPLPPLY	192,00	10
2395	HPV	type 16	5	13	B*5102	AALLCFST	660,00	8

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2396	HPV	type 16	5	13	B*5102	IAFNGLGLI	1100,00	8
2397	HPV	type 16	5	13	B*5102	SGLPNTFV	145,20	8
2398	HPV	type 16	5	13	B*5102	EPVLHLYV	660,00	8
2399	HPV	type 16	5	13	B*3901	LHLYVVLL	270,00	8
2400	HPV	type 16	5	13	B*5103	FAALLCFSI	110,00	9
2401	HPV	type 16	5	13	B*5102	FAALLCFSI	440,00	9
2402	HPV	type 16	5	13	A*0201	ALLCFSIHI	146,69	9
2403	HPV	type 16	5	13	B*3901	IHIAFNGLGL	180,00	9
2404	HPV	type 16	5	13	B*5102	IAFNGLGLI	275,00	9
2405	HPV	type 16	5	13	Cw*0401	AFNLGLLIL	400,00	9
2406	HPV	type 16	5	13	Cw*0401	HPLISLSGL	160,00	9
2407	HPV	type 16	5	13	B*5102	HPLISLSGL	300,00	9
2408	HPV	type 16	5	13	B62	SLSGLENTF	105,60	9
2409	HPV	type 16	5	13	Cw*0301	SGLPNTFVL	120,00	9
2410	HPV	type 16	5	13	A*0201	FVLEPVLHL	300,01	9
2411	HPV	type 16	5	13	A*0205	FVLEPVLHL	756,00	9
2412	HPV	type 16	5	13	A1	VLEPVLHLY	450,00	9
2413	HPV	type 16	5	13	B*5102	EPVLHLYVV	660,00	9
2414	HPV	type 16	5	13	B*5102	AALLCFSIHI	660,00	10
2415	HPV	type 16	5	13	B*5103	AALLCFSIHI	132,00	10
2416	HPV	type 16	5	13	Cw*0401	CFSIHI AFNL	200,00	10
2417	HPV	type 16	5	13	B*5102	IAFNGLGLIL	302,50	10
2418	HPV	type 16	5	13	B*3901	THPLISLSGL	135,00	10
2419	HPV	type 16	5	13	B*5801	ISLSGLPNTF	108,90	10
2420	HPV	type 16	5	13	A*0201	SLSGLENTFV	382,54	10
2421	HPV	type 16	5	13	B*5102	LENTFVLEPV	266,20	10
2422	HPV	type 16	5	13	Cw*0401	TFVLEPVLHL	440,00	10
2423	HPV	type 16	5	13	B*5102	EPVLHLYVV	330,00	10
2424	HPV	type 16	5	13	Cw*0301	EPVLHLYVV	100,00	10
2425	HPV	type 16	5	14	B*5102	LPVLNNHYHL	363,00	10
2426	HPV	type 16	5	16	B*3901	IHYIPYPL	180,00	8
2427	HPV	type 16	5	16	B*5102	YPLPHWYL	600,00	8
2428	HPV	type 16	5	16	Cw*0401	LEFFPLQPL	400,00	9
2429	HPV	type 16	5	16	B*5102	FPLQPLHKT	132,00	9
2430	HPV	type 16	5	16	B*5102	FPLQPLHKT	3194,40	10
2431	HPV	type 16	5	16	B*2705	LQPLHKTTHY	100,00	10
2432	HPV	type 16	5	16	B*5102	QPLHKTTHYI	1756,92	10
2433	HPV	type 16	5	16	B7	IPYPLPHWYL	120,00	10
2434	HPV	type 16	5	16	B*5102	IPYPLPHWYL	550,00	10
2435	HPV	type 16	5	16	Cw*0301	IPYPLPHWYL	100,00	10
2436	HPV	type 16	5	17	B*2705	HLFHPPEL	150,00	8
2437	HPV	type 16	5	17	B*5102	PPLSCHLI	120,00	8
2438	HPV	type 16	5	17	B*2705	SRDQLSIV	600,00	8
2439	HPV	type 16	5	17	B*3901	DHLFHPPEL	180,00	9
2440	HPV	type 16	5	17	Cw*0401	HPPPLSCHL	105,60	9
2441	HPV	type 16	5	17	B*5102	HPPPLSCHL	100,00	9
2442	HPV	type 16	5	17	B*2705	SRDQLSLVA	200,00	9
2443	HPV	type 16	5	17	A*0201	SLVANLTYI	131,97	9
2444	HPV	type 16	5	17	B*5102	HPPPLSCHLI	400,00	10
2445	HPV	type 16	5	17	B*2705	SRDQLSLVAN	200,00	10
2446	HPV	type 16	5	19	B*5102	FGYALSEI	800,00	8
2447	HPV	type 16	5	19	A*0205	WVLKHCSSL	126,00	9
2448	HPV	type 16	5	19	B*5102	YALSFIEHL	330,00	9
2449	HPV	type 16	5	19	A*0205	WVLKHCSSL	126,00	10
2450	HPV	type 16	5	19	B62	ILTGFGSTDF	149,76	10
2451	HPV	type 16	5	19	B*3701	TDFGYALSEI	200,00	10
2452	HPV	type 16	5	19	Cw*0401	GYALSFIEHL	400,00	10
2453	HPV	type 16	5	19	A24	GYALSFIEHL	220,00	10
2454	HPV	type 16	5	19	B*5102	YALSFIEHL	330,00	10
2455	HPV	type 16	5	1	B*5103	CAVLQMNNV	121,00	9
2456	HPV	type 16	5	1	B*5102	CAVLQMNNV	363,00	9
2457	HPV	type 16	5	2	B*5102	KALAHSDL	150,00	8
2458	HPV	type 16	5	2	A*0201	ALAHSDLFYM	364,50	10
2459	HPV	type 16	5	3	B*2705	CRSGKQGF	1000,00	8
2460	HPV	type 16	5	3	B*2705	KQETKYFK	600,00	8
2461	HPV	type 16	5	3	B*2705	KQGFQTHGK	600,00	9
2462	HPV	type 16	5	3	A68.1	MVGKQCRSGK	240,00	10
2463	HPV	type 16	5	3	B*2705	KQCRSGKQGF	300,00	10
2464	HPV	type 16	5	3	B*2705	CRSGKQGFQGT	200,00	10
2465	HPV	type 16	5	6	B*5102	AAHNDIFV	121,00	8
2466	HPV	type 16	5	6	B*3901	AAHNDIFV	180,00	8
2467	HPV	type 16	5	6	B*2705	LRVVSTTV	600,00	8
2468	HPV	type 16	5	6	B*5102	LPQQMPLL	110,00	8
2469	HPV	type 16	5	6	B*5103	MAAHNDIFV	110,00	9
2470	HPV	type 16	5	6	B*5102	MAAHNDIFV	121,00	9
2471	HPV	type 16	5	6	B*2705	LRVVSTTVT	200,00	9
2472	HPV	type 16	5	6	B*5801	VSTTVTNSW	132,00	9
2473	HPV	type 16	5	6	Cw*0301	SWLPQQMPL	120,00	9
2474	HPV	type 16	5	6	A*0201	WLPQQMPLL	226,01	9
2475	HPV	type 16	5	6	A*0201	FVLRVVSTTV	103,58	10
2476	HPV	type 16	5	6	B*2705	LRVVSTTVTN	200,00	10
2477	HPV	type 16	5	6	Cw*0301	SWLPQQMPLL	200,00	10
2478	HPV	type 16	5	7	B*5102	SPTVPALL	100,00	8
2479	HPV	type 16	5	7	Cw*0401	TFSPTVPAL	576,00	9
2480	HPV	type 16	5	7	B*5102	VPALLNKCL	133,10	9
2481	HPV	type 16	5	7	Cw*0401	TFSPTVPALL	288,00	10
2482	HPV	type 16	5	8	B*2705	VRATYSSV	600,00	8
2483	HPV	type 16	5	8	B*2705	VRATYSSVL	2000,00	9
2484	HPV	type 16	5	8	A24	TYSSVLTTL	280,00	9
2485	HPV	type 16	5	8	Cw*0401	TYSSVLTTL	400,00	9

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2486	HPV	type 16 5	8	B7	FVRATYSSVL	200,00	10
2487	HPV	type 16 5	8	B*2705	VRATYSSVLT	200,00	10
2488	HPV	type 16 5	9	B*2705	YRFSTTST	1000,00	8
2489	HPV	type 16 5	9	A*0201	YLSTYRFST	198,82	9
2490	HPV	type 16 5	10	B*2705	CRCWRLQY	1000,00	8
2491	HPV	type 16 5	10	B*2705	WRLQYRWV	600,00	8
2492	HPV	type 16 5	10	B*2705	YRWVSESG	100,00	8
2493	HPV	type 16 5	10	B*2705	CRCWRLQYR	1000,00	9
2494	HPV	type 16 5	10	B*2705	WRLQYRWVS	200,00	9
2495	HPV	type 16 5	10	B*2705	LQYRWVSES	100,00	9
2496	HPV	type 16 5	10	B*2702	YRWVSESGI	300,00	9
2497	HPV	type 16 5	10	B*2705	YRWVSESGI	3000,00	9
2498	HPV	type 16 5	10	B*2702	CRCWRLQYRW	100,00	10
2499	HPV	type 16 5	10	B*2705	CRCWRLQYRW	200,00	10
2500	HPV	type 16 5	10	B*2702	YRWVSESGII	300,00	10
2501	HPV	type 16 5	10	B*2705	YRWVSESGII	3000,00	10
2502	HPV	type 16 5	11	B*5102	LPQLMLL	110,00	8
2503	HPV	type 16 5	11	B*5102	NALYCICL	165,00	8
2504	HPV	type 16 5	11	B*3901	LHQTALPL	135,00	8
2505	HPV	type 16 5	11	B*2705	HQTALPLY	100,00	8
2506	HPV	type 16 5	11	B*3901	IHVFLYIL	180,00	8
2507	HPV	type 16 5	11	B*3901	NHNSQLDPL	135,00	9
2508	HPV	type 16 5	11	A*0205	SQDPLPQL	100,80	9
2509	HPV	type 16 5	11	B*2705	SQDPLPQL	200,00	9
2510	HPV	type 16 5	11	Cw*0301	DPLPQLML	100,00	9
2511	HPV	type 16 5	11	Cw*0401	DPLPQLML	192,00	9
2512	HPV	type 16 5	11	B*5102	DPLPQLML	330,00	9
2513	HPV	type 16 5	11	A*0201	LLMLLHKYI	360,92	9
2514	HPV	type 16 5	11	A*0201	MLLHKYIYV	3609,23	9
2515	HPV	type 16 5	11	B*5103	TALPLYIHV	132,00	9
2516	HPV	type 16 5	11	B*5102	TALPLYIHV	300,00	9
2517	HPV	type 16 5	11	B*5102	LPLYIHVFL	300,00	9
2518	HPV	type 16 5	11	A24	LYIHVFLYI	126,00	9
2519	HPV	type 16 5	11	B*3901	IHVFLYILL	180,00	9
2520	HPV	type 16 5	11	Cw*0301	IHVFLYILL	100,00	9
2521	HPV	type 16 5	11	A*0201	FLYILLVQL	723,25	9
2522	HPV	type 16 5	11	A*0205	FLYILLVQL	126,00	9
2523	HPV	type 16 5	11	B*2705	FLYILLVQL	150,00	9
2524	HPV	type 16 5	11	A*0201	ILLVQLNTL	309,05	9
2525	HPV	type 16 5	11	B*2705	SQDPLPQLL	200,00	10
2526	HPV	type 16 5	11	B*3701	LDPLPQLML	200,00	10
2527	HPV	type 16 5	11	B*5102	DPLPQLMLL	300,00	10
2528	HPV	type 16 5	11	Cw*0301	DPLPQLMLL	120,00	10
2529	HPV	type 16 5	11	Cw*0401	DPLPQLMLL	192,00	10
2530	HPV	type 16 5	11	A*0201	QLMLLHKYI	212,31	10
2531	HPV	type 16 5	11	A*0201	LMLLHKYIYV	2606,66	10
2532	HPV	type 16 5	11	Cw*0301	IYVSSLYNAL	100,00	10
2533	HPV	type 16 5	11	Cw*0401	IYVSSLYNAL	200,00	10
2534	HPV	type 16 5	11	A24	IYVSSLYNAL	432,00	10
2535	HPV	type 16 5	11	Cw*0401	LYNALYCICL	200,00	10
2536	HPV	type 16 5	11	A24	LYNALYCICL	300,00	10
2537	HPV	type 16 5	11	A*0201	ALPLYIHVFL	117,49	10
2538	HPV	type 16 5	11	Cw*0401	LYIHVFLYIL	400,00	10
2539	HPV	type 16 5	11	A24	LYIHVFLYIL	300,00	10
2540	HPV	type 16 5	11	Cw*0401	VFLYILLVQL	400,00	10
2541	HPV	type 16 5	11	A*0201	YILLVQLNTL	114,98	10
2542	HPV	type 16 5	11	A*0205	YILLVQLNTL	126,00	10
2543	HPV	type 16 5	12	B*2705	VQLLVMLY	100,00	8
2544	HPV	type 16 5	12	B*2705	IQFVLAPL	200,00	8
2545	HPV	type 16 5	12	A24	HYIYVSYIL	280,00	9
2546	HPV	type 16 5	12	Cw*0401	HYIYVSYIL	200,00	9
2547	HPV	type 16 5	12	A24	YIYVSYILF	150,00	9
2548	HPV	type 16 5	12	Cw*0401	YIYVSYILF	100,00	9
2549	HPV	type 16 5	12	A*0201	YIYVSYILFL	170,92	9
2550	HPV	type 16 5	12	Cw*0301	VSYILFLTL	120,00	9
2551	HPV	type 16 5	12	A*0201	ILFLTLVAV	1006,21	9
2552	HPV	type 16 5	12	B*5102	VAVQLLVML	165,00	9
2553	HPV	type 16 5	12	A*0201	QLLVMLYSL	181,79	9
2554	HPV	type 16 5	12	A*0201	MLYSLIQPV	870,23	9
2555	HPV	type 16 5	12	A24	LYSLIQPVL	280,00	9
2556	HPV	type 16 5	12	Cw*0401	LYSLIQPVL	200,00	9
2557	HPV	type 16 5	12	B*3901	FHYIYVSYIL	180,00	10
2558	HPV	type 16 5	12	Cw*0401	FHYIYVSYILF	100,00	10
2559	HPV	type 16 5	12	A24	FHYIYVSYILF	100,00	10
2560	HPV	type 16 5	12	Cw*0401	FHYIYVSYILFL	400,00	10
2561	HPV	type 16 5	12	A24	FHYIYVSYILFL	300,00	10
2562	HPV	type 16 5	12	A*0201	YILFLTLVAV	374,37	10
2563	HPV	type 16 5	12	Cw*0401	LFLLTLVAVQL	200,00	10
2564	HPV	type 16 5	12	A*0201	FLTLVAVQLL	226,01	10
2565	HPV	type 16 5	12	B*2705	VQLLVMLYSL	200,00	10
2566	HPV	type 16 5	12	A*0201	VMLYSLIQPV	726,71	10
2567	HPV	type 16 5	12	B*2705	MLYSLIQPVL	150,00	10
2568	HPV	type 16 5	13	B*5102	NGLCFTSI	264,00	8
2569	HPV	type 16 5	13	B*3901	GHFCTNGL	180,00	9
2570	HPV	type 16 5	13	Cw*0401	CFTSIETKF	110,00	9
2571	HPV	type 16 5	13	B*5102	FPSNAFLKL	440,00	9
2572	HPV	type 16 5	13	Cw*0401	HFSCNTGLCF	100,00	10
2573	HPV	type 16 5	13	Cw*0401	KFPSNAFLKL	242,00	10
2574	HPV	type 16 5	14	B*2705	MQFFLGMPCK	100,00	9
2575	HPV	type 16 5	14	B*2705	MQFFLGMPCK	1000,00	10

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2576	HPV	type 16 5	14	Cw*0401	FFLGMPCKNL	200,00	10
2577	HPV	type 16 5	14	B*5102	MPCKNLFNAV	220,00	10
2578	HPV	type 16 5	15	B*2705	KQYCCNSV	900,00	8
2579	HPV	type 16 5	15	B*2705	HQSQHVDL	200,00	8
2580	HPV	type 16 5	15	B*2705	SQHVDLLL	200,00	8
2581	HPV	type 16 5	15	B*3901	QHVDLLL	540,00	8
2582	HPV	type 16 5	15	B*5102	IAAFALLV	100,00	8
2583	HPV	type 16 5	15	B*3901	WHIVCLSL	270,00	8
2584	HPV	type 16 5	15	B*5102	TPSPPLPL	100,00	8
2585	HPV	type 16 5	15	B*2702	KQYCCNSVF	300,00	9
2586	HPV	type 16 5	15	B*2705	KQYCCNSVF	1500,00	9
2587	HPV	type 16 5	15	B*5201	KQYCCNSVF	275,00	9
2588	HPV	type 16 5	15	A*0201	FILSAILGV	374,37	9
2589	HPV	type 16 5	15	B*5102	LGVSENAAI	264,00	9
2590	HPV	type 16 5	15	B*5103	AAIHQSQHV	110,00	9
2591	HPV	type 16 5	15	B*5102	AAIHQSQHV	399,30	9
2592	HPV	type 16 5	15	B*2705	HQSQHVDLL	200,00	9
2593	HPV	type 16 5	15	B*2705	SQHVDLLL	200,00	9
2594	HPV	type 16 5	15	B*5102	NGLTNSEKL	159,72	9
2595	HPV	type 16 5	15	Cw*0301	EKLTPYNSL	100,00	9
2596	HPV	type 16 5	15	B*5102	FANIAAFAL	100,00	9
2597	HPV	type 16 5	15	Cw*0301	ANIAAFALL	100,00	9
2598	HPV	type 16 5	15	A*0201	LLVFTFKI	102,87	9
2599	HPV	type 16 5	15	B7	TPSPPLPLL	120,00	9
2600	HPV	type 16 5	15	Cw*0401	TPSPPLPLL	192,00	9
2601	HPV	type 16 5	15	B*5102	TPSPPLPLL	100,00	9
2602	HPV	type 16 5	15	B*2705	KQYCCNSVFI	900,00	10
2603	HPV	type 16 5	15	B*5201	KQYCCNSVFI	165,00	10
2604	HPV	type 16 5	15	Cw*0401	QYCCNSVFIL	400,00	10
2605	HPV	type 16 5	15	A24	QYCCNSVFIL	200,00	10
2606	HPV	type 16 5	15	B*5102	NAAIHQSQHV	121,00	10
2607	HPV	type 16 5	15	B*5103	NAAIHQSQHV	110,00	10
2608	HPV	type 16 5	15	B*3901	IQSQHVDLL	135,00	10
2609	HPV	type 16 5	15	B*2705	HQSQHVDLLL	200,00	10
2610	HPV	type 16 5	15	B60	SEKLTYPYNSL	160,00	10
2611	HPV	type 16 5	15	Cw*0401	NFANIAAFAL	220,00	10
2612	HPV	type 16 5	15	B*5102	FANIAAFALL	100,00	10
2613	HPV	type 16 5	15	Cw*0401	AFALLVFSTF	100,00	10
2614	HPV	type 16 5	15	A*0201	ALLVFSTFKI	223,89	10
2615	HPV	type 16 5	15	A*0201	LVSTFKIFV	800,05	10
2616	HPV	type 16 5	15	A*0201	KIFVSGVWHI	320,45	10
2617	HPV	type 16 5	16	B*2705	NRWGTQFL	10000,00	8
2618	HPV	type 16 5	16	B*2705	TQFLVCP	1000,00	8
2619	HPV	type 16 5	16	B*2702	NRWGTQFLV	100,00	9
2620	HPV	type 16 5	16	B*2705	NRWGTQFLV	3000,00	9
2621	HPV	type 16 5	16	B*2705	TQFLVCP	100,00	9
2622	HPV	type 16 5	16	A*0201	FLVCP	226,01	9
2623	HPV	type 16 5	16	Cw*0301	TGLPKYECL	500,00	9
2624	HPV	type 16 5	16	B*5102	LPKYECLRV	200,00	9
2625	HPV	type 16 5	16	A24	KYECLRVCF	360,00	9
2626	HPV	type 16 5	16	Cw*0401	KYECLRVCF	100,00	9
2627	HPV	type 16 5	16	B60	SENWGTQFL	160,00	10
2628	HPV	type 16 5	16	B*2702	NRWGTQFLV	100,00	10
2629	HPV	type 16 5	16	B*2705	NRWGTQFLV	1000,00	10
2630	HPV	type 16 5	16	Cw*0401	QFLVCP	400,00	10
2631	HPV	type 16 5	16	A68.1	LVCPLTGLPK	180,00	10
2632	HPV	type 16 5	17	B*2705	LLFVQMSL	150,00	8
2633	HPV	type 16 5	17	B*2705	VQMSLLFF	100,00	8
2634	HPV	type 16 5	17	B*2705	FRTQWLLT	200,00	8
2635	HPV	type 16 5	17	B*2705	TQWLLTVN	100,00	8
2636	HPV	type 16 5	17	A*0201	LLFVQMSLL	309,05	9
2637	HPV	type 16 5	17	B*2705	LLFVQMSLL	150,00	9
2638	HPV	type 16 5	17	Cw*0401	LFVQMSLLF	110,00	9
2639	HPV	type 16 5	17	B*2705	VQMSLLFFR	100,00	9
2640	HPV	type 16 5	17	A*0201	LLFFRTQWL	739,03	9
2641	HPV	type 16 5	17	B*2705	LLFFRTQWL	150,00	9
2642	HPV	type 16 5	17	Cw*0401	LFRTQWLL	240,00	9
2643	HPV	type 16 5	17	B*2705	FRTQWLLTV	600,00	9
2644	HPV	type 16 5	17	B*2705	TQWLLTVNT	100,00	9
2645	HPV	type 16 5	17	A*0201	SLLFVQMSLL	181,79	10
2646	HPV	type 16 5	17	Cw*0401	LFVQMSLLFF	200,00	10
2647	HPV	type 16 5	17	A68.1	FVQMSLLFFR	200,00	10
2648	HPV	type 16 5	17	B*5801	MSLLFFRTQW	120,00	10
2649	HPV	type 16 5	17	A*0201	SLLFFRTQWL	434,72	10
2650	HPV	type 16 5	17	A*0201	LLFFRTQWLL	1007,77	10
2651	HPV	type 16 5	17	B*2705	LLFFRTQWLL	150,00	10
2652	HPV	type 16 5	17	B*2705	FRTQWLLTVN	200,00	10
2653	HPV	type 16 5	18	A*0201	LLTNFRKL	138,00	9
2654	HPV	type 16 5	20	B*5102	FGYALSFI	800,00	8
2655	HPV	type 16 5	20	B*5102	YALSFIHEL	330,00	9
2656	HPV	type 16 5	20	B62	ILTFGSGTDF	149,76	10
2657	HPV	type 16 5	20	B*3701	TDFGYALSFI	200,00	10
2658	HPV	type 16 5	20	Cw*0401	GYALSFIHEL	400,00	10
2659	HPV	type 16 5	20	A24	GYALSFIHEL	220,00	10
2660	HPV	type 16 5	20	B*5102	YALSFIHELL	330,00	10
2661	HPV	type 16 6	1	B*2705	LQNIVYIK	200,00	8
2662	HPV	type 16 6	1	B*2705	KQDVANIV	180,00	8
2663	HPV	type 16 6	1	B*5103	LALQNIVYI	175,69	9
2664	HPV	type 16 6	1	B*5102	LALQNIVYI	878,46	9
2665	HPV	type 16 6	1	A3	ALQNIVYIK	270,00	9

2666	HPV	type 16 6	1	B*2705	KQKQDVANI	180,00	9
2667	HPV	type 16 6	1	B*2705	KQDVANIVY	300,00	9
2668	HPV	type 16 6	1	B*2705	KQKQDVANIV	180,00	10
2669	HPV	type 16 6	1	B*5201	KQKQDVANIV	200,00	10
2670	HPV	type 16 6	1	B*2705	KQDVANIVYI	180,00	10
2671	HPV	type 16 6	2	B*2705	KTFPLNLL	150,00	8
2672	HPV	type 16 6	2	A68.1	LVVKICVLK	240,00	9
2673	HPV	type 16 6	2	B*2705	LQKTFPLNL	200,00	9
2674	HPV	type 16 6	2	B*2705	LQKTFPLNLL	200,00	10
2675	HPV	type 16 6	2	B*2705	KTFPLNLLPK	150,00	10
2676	HPV	type 16 6	2	B*5102	FPLNLLPKKC	145,20	10
2677	HPV	type 16 6	3	B*2705	LQTYKYLL	200,00	8
2678	HPV	type 16 6	3	Cw*0401	VFDKQLPGL	600,00	9
2679	HPV	type 16 6	3	B*2705	KQLPGLQTY	300,00	9
2680	HPV	type 16 6	3	B62	KQLPGLQTY	211,20	9
2681	HPV	type 16 6	3	A24	TYKYLLVCL	240,00	9
2682	HPV	type 16 6	3	Cw*0401	TYKYLLVCL	400,00	9
2683	HPV	type 16 6	3	B60	LEVYVFDKQL	352,00	10
2684	HPV	type 16 6	3	A*0201	YVFDKQLPGL	300,01	10
2685	HPV	type 16 6	3	A*0205	YVFDKQLPGL	756,00	10
2686	HPV	type 16 6	3	B*2705	KQLPGLQTYK	600,00	10
2687	HPV	type 16 6	3	B*5102	LPGLQTYKYL	146,41	10
2688	HPV	type 16 6	3	A*0201	GLQTYKYLLV	104,33	10
2689	HPV	type 16 6	3	Cw*0401	TYKYLLVCLL	400,00	10
2690	HPV	type 16 6	3	A24	TYKYLLVCLL	240,00	10
2691	HPV	type 16 6	3	A*0201	YLLVCLLGEV	353,95	10
2692	HPV	type 16 6	3	A68.1	VVDQNSSPPK	120,00	10
2693	HPV	type 16 6	4	B*2705	RLFCTVEK	450,00	8
2694	HPV	type 16 6	4	B*2705	LRLFCTVEK	2000,00	9
2695	HPV	type 16 6	6	B*3901	QHWYMGIL	180,00	8
2696	HPV	type 16 6	6	B*5102	MGILCPSV	132,00	8
2697	HPV	type 16 6	6	A*0201	LMVDNHLDL	107,54	9
2698	HPV	type 16 6	6	B*2705	LQHWYMGIL	200,00	9
2699	HPV	type 16 6	6	A*0201	YMILCPSV	231,07	9
2700	HPV	type 16 6	6	A*0201	LMVDNHLDDL	121,19	10
2701	HPV	type 16 6	8	B*2705	MRCQENQT	200,00	8
2702	HPV	type 16 6	8	B*2702	MRCQENQTY	200,00	9
2703	HPV	type 16 6	8	B*2705	MRCQENQTY	1000,00	9
2704	HPV	type 16 6	8	A24	TYWGQVNVF	120,00	9
2705	HPV	type 16 6	8	Cw*0401	TYWGQVNVF	200,00	9
2706	HPV	type 16 6	8	B*2702	MRCQENQTYW	100,00	10
2707	HPV	type 16 6	8	B*2705	MRCQENQTYW	200,00	10
2708	HPV	type 16 6	9	B*2705	LQVVMFL	200,00	8
2709	HPV	type 16 6	9	B*2705	VQHIHPCL	200,00	8
2710	HPV	type 16 6	9	Cw*0401	MFLHDNICL	200,00	9
2711	HPV	type 16 6	9	A*0201	FLHDNICLC	215,50	9
2712	HPV	type 16 6	9	A*0201	WMFLHDNICL	262,59	10
2713	HPV	type 16 6	9	B*2705	WMFLHDNICL	250,00	10
2714	HPV	type 16 6	9	A*0201	FLHDNICLCV	1311,75	10
2715	HPV	type 16 6	11	B*5102	AGLCKATI	240,00	8
2716	HPV	type 16 6	11	B*5102	YAGLSYVI	440,00	8
2717	HPV	type 16 6	11	B*2705	VRLYNPRR	300,00	8
2718	HPV	type 16 6	11	B*2705	GRDPGMGV	600,00	8
2719	HPV	type 16 6	11	B*5102	DPGMGVLL	110,00	8
2720	HPV	type 16 6	11	B*5102	MGVLLVTV	132,00	8
2721	HPV	type 16 6	11	A*0201	YLMEVRLEV	1183,78	9
2722	HPV	type 16 6	11	B14	VRLEVNAGL	100,00	9
2723	HPV	type 16 6	11	B*2705	VRLEVNAGL	2000,00	9
2724	HPV	type 16 6	11	B*5103	NAGLCKATI	121,00	9
2725	HPV	type 16 6	11	B*5102	NAGLCKATI	242,00	9
2726	HPV	type 16 6	11	A3	GLCKATISK	120,00	9
2727	HPV	type 16 6	11	B*5102	GAILILLSL	165,00	9
2728	HPV	type 16 6	11	B62	ILLSLLEKY	104,00	9
2729	HPV	type 16 6	11	A*0201	SLLEKYNVL	199,30	9
2730	HPV	type 16 6	11	A*0205	SLLEKYNVL	126,00	9
2731	HPV	type 16 6	11	Cw*0301	SLLEKYNVL	150,00	9
2732	HPV	type 16 6	11	A24	KYNVLSTSI	180,00	9
2733	HPV	type 16 6	11	Cw*0301	TSIPSYAGL	500,00	9
2734	HPV	type 16 6	11	A*0201	GLSYVISLV	159,97	9
2735	HPV	type 16 6	11	A68.1	TTLTCCVVR	100,00	9
2736	HPV	type 16 6	11	A68.1	CVVRLYNPR	400,00	9
2737	HPV	type 16 6	11	A68.1	VVRLYNPRR	200,00	9
2738	HPV	type 16 6	11	B*2705	GRDPGMGVLL	2000,00	9
2739	HPV	type 16 6	11	B*3701	RDPMGMVLL	200,00	9
2740	HPV	type 16 6	11	B*5102	DPGMGVLLV	220,00	9
2741	HPV	type 16 6	11	A*0201	GMGVLLVTV	115,53	9
2742	HPV	type 16 6	11	A*0201	LLVTVLGFV	194,44	9
2743	HPV	type 16 6	11	B*5102	LGFVLTINV	220,00	9
2744	HPV	type 16 6	11	B*2705	VRLEVNAGLC	200,00	10
2745	HPV	type 16 6	11	B*5102	GAILILLSLL	165,00	10
2746	HPV	type 16 6	11	A*0201	LLSLLEKYNV	118,24	10
2747	HPV	type 16 6	11	Cw*0301	LLSLLEKYNV	100,00	10
2748	HPV	type 16 6	11	B*5102	IPSYAGLSYV	242,00	10
2749	HPV	type 16 6	11	B*5102	YAGLSYVISL	110,00	10
2750	HPV	type 16 6	11	B*5102	AGLSYVISLV	145,20	10
2751	HPV	type 16 6	11	A68.1	CVVRLYNPRR	400,00	10
2752	HPV	type 16 6	11	B*2705	RRATGRDPGM	1800,00	10
2753	HPV	type 16 6	11	B*2705	GRDPGMGVLL	2000,00	10
2754	HPV	type 16 6	11	A*0201	VLLVTVLGFV	719,44	10
2755	HPV	type 16 6	11	A*0201	VLGFVLTINV	118,24	10



2756	HPV	type 16	6	12	B*2705	SRLCFFGA	200,00	8
2757	HPV	type 16	6	12	B*2705	QQLVFNPF	100,00	8
2758	HPV	type 16	6	12	B*2705	FRRGYFVA	200,00	8
2759	HPV	type 16	6	12	B*2705	RRGYFVAA	600,00	8
2760	HPV	type 16	6	12	Cw*0401	FFGAQGDGF	100,00	9
2761	HPV	type 16	6	12	B*2705	GRGGVVGQV	600,00	9
2762	HPV	type 16	6	12	B*2705	QQLVFNPF	100,00	9
2763	HPV	type 16	6	12	A68.1	QVLNNFRR	600,00	9
2764	HPV	type 16	6	12	B*2705	FRRGYFVAA	200,00	9
2765	HPV	type 16	6	12	B*2705	RRGYFVAAK	6000,00	9
2766	HPV	type 16	6	12	A68.1	FVAAKHRCR	400,00	9
2767	HPV	type 16	6	12	Cw*0401	CFFGAQGDGF	100,00	10
2768	HPV	type 16	6	12	B*2705	AQGDGFGMGR	100,00	10
2769	HPV	type 16	6	12	B*5102	DGFGMGRGGV	242,00	10
2770	HPV	type 16	6	12	B*2705	GRGGVVGQVL	2000,00	10
2771	HPV	type 16	6	12	B*2705	QQLVFNPF	100,00	10
2772	HPV	type 16	6	12	B*2705	FRRGYFVAAK	2000,00	10
2773	HPV	type 16	6	12	B*2705	RRGYFVAAKH	600,00	10
2774	HPV	type 16	6	13	B*2705	TRMNFYF	1000,00	8
2775	HPV	type 16	6	13	B*5102	FPYFIFTI	4000,00	8
2776	HPV	type 16	6	13	B*2705	TRMNFYFI	600,00	9
2777	HPV	type 16	6	13	B*5201	FPYFIFTIF	250,00	9
2778	HPV	type 16	6	13	A*0201	FIFTIFCI	269,06	9
2779	HPV	type 16	6	13	Cw*0401	IFFCIIFKL	440,00	9
2780	HPV	type 16	6	13	B*2702	TRMNFYFIF	200,00	10
2781	HPV	type 16	6	13	B*2705	TRMNFYFIF	1000,00	10
2782	HPV	type 16	6	13	Cw*0401	NFPYFIFTIF	100,00	10
2783	HPV	type 16	6	13	Cw*0401	IFTIFFCIIF	100,00	10
2784	HPV	type 16	6	13	A*0201	TIFFCIIFKL	144,98	10
2785	HPV	type 16	6	14	Cw*0401	HFCISMFF	150,00	9
2786	HPV	type 16	6	14	B*5801	ISMFFYTSCW	120,00	10
2787	HPV	type 16	6	15	B*2705	FRFRQMET	1000,00	8
2788	HPV	type 16	6	15	B*2702	FRFRQMETH	100,00	9
2789	HPV	type 16	6	15	B*2705	FRFRQMETH	1000,00	9
2790	HPV	type 16	6	18	B*5102	NQLQFLPV	660,00	8
2791	HPV	type 16	6	18	B*2705	LQFLPVNY	500,00	8
2792	HPV	type 16	6	18	A*0205	LVYNYVTLL	142,80	9
2793	HPV	type 16	6	18	Cw*0301	LVYNYVTLL	100,00	9
2794	HPV	type 16	6	18	A24	VYTLHNPL	288,00	9
2795	HPV	type 16	6	18	Cw*0401	VYTLHNPL	200,00	9
2796	HPV	type 16	6	18	A*0201	LLHNPLQFL	459,40	9
2797	HPV	type 16	6	18	B*2702	LQFLPVNYF	100,00	9
2798	HPV	type 16	6	18	B*2705	LQFLPVNYF	500,00	9
2799	HPV	type 16	6	18	Cw*0301	QFLPVNYFL	100,00	9
2800	HPV	type 16	6	18	Cw*0401	QFLPVNYFL	240,00	9
2801	HPV	type 16	6	18	Cw*0301	LLVYNYVTLL	100,00	10
2802	HPV	type 16	6	18	A*0201	TLHNPLQFL	999,87	10
2803	HPV	type 16	6	18	B*2705	LQFLPVNYFL	1000,00	10
2804	HPV	type 16	6	18	B*5201	LQFLPVNYFL	130,68	10
2805	HPV	type 16	6	19	B*2705	MQFHYRL	1000,00	8
2806	HPV	type 16	6	19	B*2705	YRLLCHYR	1000,00	8
2807	HPV	type 16	6	19	B*2705	YRRPIVPS	200,00	8
2808	HPV	type 16	6	19	B*2705	RRPIVPSV	1800,00	8
2809	HPV	type 16	6	19	B*5102	RPVPSVI	1200,00	8
2810	HPV	type 16	6	19	A24	IYMQFHYRL	300,00	9
2811	HPV	type 16	6	19	Cw*0401	IYMQFHYRL	200,00	9
2812	HPV	type 16	6	19	B*2705	MQFHYRLC	100,00	9
2813	HPV	type 16	6	19	B*2705	YRLLCHYRR	1000,00	9
2814	HPV	type 16	6	19	B*2705	YRRPIVPSV	600,00	9
2815	HPV	type 16	6	19	B*2702	RRPIVPSVI	180,00	9
2816	HPV	type 16	6	19	B*2705	RRPIVPSVI	1800,00	9
2817	HPV	type 16	6	19	B*5201	RPVPSVII	132,00	9
2818	HPV	type 16	6	19	B*5102	RPVPSVII	1200,00	9
2819	HPV	type 16	6	19	Cw*0301	IYMQFHYRL	100,00	10
2820	HPV	type 16	6	19	Cw*0401	IYMQFHYRL	220,00	10
2821	HPV	type 16	6	19	A24	IYMQFHYRL	300,00	10
2822	HPV	type 16	6	19	B*2705	MQFHYRLCH	100,00	10
2823	HPV	type 16	6	19	B*2705	YRRPIVPSVI	600,00	10
2824	HPV	type 16	6	19	B*2702	RRPIVPSVII	180,00	10
2825	HPV	type 16	6	19	B*2705	RRPIVPSVII	1800,00	10
2826	HPV	type 16	6	20	Cw*0401	VFVSILACL	480,00	9
2827	HPV	type 16	6	20	A*0205	FVVSILACL	252,00	10
2828	HPV	type 16	6	21	B*5102	EALSSYTL	150,00	8
2829	HPV	type 16	6	21	Cw*0401	LFYTNIMLL	400,00	9
2830	HPV	type 16	6	21	A24	FYTNIMLL	280,00	9
2831	HPV	type 16	6	21	Cw*0401	FYTNIMLL	240,00	9
2832	HPV	type 16	6	21	Cw*0301	MLLLYYAIL	100,00	9
2833	HPV	type 16	6	21	A24	LYYAILEAL	280,00	9
2834	HPV	type 16	6	21	Cw*0401	LYYAILEAL	400,00	9
2835	HPV	type 16	6	21	B50	LEALSSYTL	640,00	9
2836	HPV	type 16	6	21	Cw*0401	LFYTNIMLL	240,00	10
2837	HPV	type 16	6	21	Cw*0301	IMLLYYAIL	100,00	10
2838	HPV	type 16	6	21	A*0201	LLYYAILEAL	130,97	10
2839	HPV	type 16	6	21	B*2705	LLYYAILEAL	150,00	10
2840	HPV	type 16	6	23	B*2705	QRMCCLCF	1000,00	8
2841	HPV	type 16	6	23	A3	MLFCFLCSK	450,00	9
2842	HPV	type 16	6	23	B*2705	MLFCFLCSK	150,00	9
2843	HPV	type 16	6	23	Cw*0401	CFLCSKQRM	100,00	9
2844	HPV	type 16	6	23	B*2705	QRMCCLCF	300,00	9
2845	HPV	type 16	6	23	B62	QRMCCLCF	288,00	9

2846	HPV	type 16	6	23	B*2705	QRMCCCLCF	200,00	9
2847	HPV	type 16	6	23	B*2705	RMCCCLCFCL	150,00	9
2848	HPV	type 16	6	23	Cw*0401	LYCISMLFCF	220,00	10
2849	HPV	type 16	6	23	A24	LYCISMLFCF	100,00	10
2850	HPV	type 16	6	23	Cw*0301	YCISMLFCFL	100,00	10
2851	HPV	type 16	6	23	A3	SMLFCFLCSK	135,00	10
2852	HPV	type 16	6	23	B*2705	QRMCCCLCFCL	2000,00	10
2853	HPV	type 16	6	24	B*2705	LRTDGAHN	200,00	8
2854	HPV	type 16	6	24	B*2705	LRTDGAHNS	200,00	9
2855	HPV	type 16	6	25	B*2705	HRFVHRPL	2000,00	8
2856	HPV	type 16	6	25	B*5102	RFVHRPLI	1320,00	8
2857	HPV	type 16	6	25	B*2705	HRPLILWN	200,00	8
2858	HPV	type 16	6	25	B*5102	RPLILWNL	300,00	8
2859	HPV	type 16	6	25	B*2705	ILWNLCLF	150,00	8
2860	HPV	type 16	6	25	B*2705	SRCLCFSS	200,00	8
2861	HPV	type 16	6	25	B14	HRPVHRPLI	120,00	9
2862	HPV	type 16	6	25	B*2705	HRPVHRPLI	600,00	9
2863	HPV	type 16	6	25	B*5102	RPVHRPLIL	330,00	9
2864	HPV	type 16	6	25	B14	HRPLILWNL	120,00	9
2865	HPV	type 16	6	25	B*2705	HRPLILWNL	2000,00	9
2866	HPV	type 16	6	25	A*0201	LILWNLCLF	233,72	9
2867	HPV	type 16	6	25	Cw*0401	CFLSRCLCF	110,00	9
2868	HPV	type 16	6	25	Cw*0401	CFSSGHSGF	100,00	9
2869	HPV	type 16	6	25	B*2705	QQDHRPVHR	100,00	10
2870	HPV	type 16	6	25	B14	HRPVHRPLIL	400,00	10
2871	HPV	type 16	6	25	B*2705	HRPVHRPLIL	2000,00	10
2872	HPV	type 16	6	25	B*2705	HRPLILWNL	200,00	10
2873	HPV	type 16	6	25	A3	ILWNLCLFSR	120,00	10
2874	HPV	type 16	6	25	B*2705	SRCLCFSSGH	200,00	10
2875	HPV	type 16	6	1	B*2705	NRDLARMA	200,00	8
2876	HPV	type 16	6	1	B*2705	ARMASRKR	300,00	8
2877	HPV	type 16	6	1	B*2705	SRKRTSLN	200,00	8
2878	HPV	type 16	6	1	B*2705	KRTSLNHS	600,00	8
2879	HPV	type 16	6	1	B*2705	GQENRDLAR	100,00	9
2880	HPV	type 16	6	1	B*2705	NRDLARMAS	200,00	9
2881	HPV	type 16	6	1	B*2705	SRKRTSLNH	200,00	9
2882	HPV	type 16	6	1	B*2705	KRTSLNHSC	600,00	9
2883	HPV	type 16	6	1	B*2705	NRDLARMASR	1000,00	10
2884	HPV	type 16	6	1	B*2705	RMASRKRSL	150,00	10
2885	HPV	type 16	6	1	B*2705	SRKRTSLNHS	200,00	10
2886	HPV	type 16	6	2	B*5102	MGLALQNI	264,00	8
2887	HPV	type 16	6	2	B*2705	LQNIIVYIK	200,00	8
2888	HPV	type 16	6	2	B*2705	KQDVANIV	180,00	8
2889	HPV	type 16	6	2	B*5201	MGLALQNIIV	360,00	9
2890	HPV	type 16	6	2	B*5102	MGLALQNIIV	132,00	9
2891	HPV	type 16	6	2	B*5103	LALQNIIVYI	175,69	9
2892	HPV	type 16	6	2	B*5102	LALQNIIVYI	878,46	9
2893	HPV	type 16	6	2	A3	ALQNIIVYIK	270,00	9
2894	HPV	type 16	6	2	B*2705	KQKQDVANI	180,00	9
2895	HPV	type 16	6	2	B*2705	KQDVANIVY	300,00	9
2896	HPV	type 16	6	2	A*0201	GLALQNIIVYI	131,97	10
2897	HPV	type 16	6	2	B*2705	KQKQDVANIV	180,00	10
2898	HPV	type 16	6	2	B*5201	KQKQDVANIV	200,00	10
2899	HPV	type 16	6	2	B*2705	KQDVANIVYI	180,00	10
2900	HPV	type 16	6	3	B*2705	TQAFKNTY	100,00	8
2901	HPV	type 16	6	3	B*2705	TRVYITI	200,00	8
2902	HPV	type 16	6	3	A68.1	DTIVTQAFK	180,00	9
2903	HPV	type 16	6	3	B*2705	TRVYITIHT	200,00	9
2904	HPV	type 16	6	3	B*3801	LHDTIVTQAF	117,00	10
2905	HPV	type 16	6	3	B*2705	TQAFKNTYTR	100,00	10
2906	HPV	type 16	6	3	B*5102	QAFKNTYTRV	1210,00	10
2907	HPV	type 16	6	3	B*5103	QAFKNTYTRV	120,00	10
2908	HPV	type 16	6	3	B*2705	TRVYITIHTN	200,00	10
2909	HPV	type 16	6	4	Cw*0401	MYKYFVELHF	110,00	10
2910	HPV	type 16	6	4	A24	MYKYFVELHF	140,00	10
2911	HPV	type 16	6	5	B*3901	QHWYMGIL	180,00	8
2912	HPV	type 16	6	5	B*5102	MGILCPV	132,00	8
2913	HPV	type 16	6	5	B*2705	LQHWYMGIL	200,00	9
2914	HPV	type 16	6	5	A*0201	YMILCPV	231,07	9
2915	HPV	type 16	6	6	B*3901	DHDLPOHL	270,00	8
2916	HPV	type 16	6	6	B*2705	HRPKPAV	600,00	8
2917	HPV	type 16	6	6	B*3501	RPKPAVY	240,00	8
2918	HPV	type 16	6	6	B*2705	MRCQENQT	200,00	8
2919	HPV	type 16	6	6	B*2702	HRPKPAVY	200,00	9
2920	HPV	type 16	6	6	B*2705	HRPKPAVY	1000,00	9
2921	HPV	type 16	6	6	Cw*0401	RPKPAVYL	105,60	9
2922	HPV	type 16	6	6	B*3501	RPKPAVYL	120,00	9
2923	HPV	type 16	6	6	Cw*0702	KPAVYLDY	115,20	9
2924	HPV	type 16	6	6	A68.1	AVYLDYKMR	200,00	9
2925	HPV	type 16	6	6	B*2702	MRCQENQTY	200,00	9
2926	HPV	type 16	6	6	B*2705	MRCQENQTY	1000,00	9
2927	HPV	type 16	6	6	A24	TYWGQVNVF	120,00	9
2928	HPV	type 16	6	6	Cw*0401	TYWGQVNVF	200,00	9
2929	HPV	type 16	6	6	B*2705	HRPKPAVYL	2000,00	10
2930	HPV	type 16	6	6	B*2702	MRCQENQTYW	100,00	10
2931	HPV	type 16	6	6	B*2705	MRCQENQTYW	200,00	10
2932	HPV	type 16	6	7	B*2705	VQHIHCL	200,00	8
2933	HPV	type 16	6	7	Cw*0401	MFLHDNICL	200,00	9
2934	HPV	type 16	6	7	A*0201	FLHDNICLC	215,50	9
2935	HPV	type 16	6	7	A*0201	FLHDNICLCV	1311,75	10

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2936	HPV	type 16 6	8	B*5102	YAPPKGIV	200,00	8
2937	HPV	type 16 6	8	B*5102	APPKGIVV	266,20	8
2938	HPV	type 16 6	8	B*5103	YAPPKGIVV	100,00	9
2939	HPV	type 16 6	8	B*5102	YAPPKGIVV	200,00	9
2940	HPV	type 16 6	8	B*5102	KGIVVFAGI	264,00	9
2941	HPV	type 16 6	9	B*5102	AGLCKATI	240,00	8
2942	HPV	type 16 6	9	B*5102	YAGLSYVI	440,00	8
2943	HPV	type 16 6	9	B*2705	VRLYNPRR	300,00	8
2944	HPV	type 16 6	9	B*2705	GRDPGGMV	600,00	8
2945	HPV	type 16 6	9	B*5102	DPGGMVLL	110,00	8
2946	HPV	type 16 6	9	B*5102	MGVLLVTV	132,00	8
2947	HPV	type 16 6	9	B14	VRLEVNAGL	100,00	9
2948	HPV	type 16 6	9	B*2705	VRLEVNAGL	2000,00	9
2949	HPV	type 16 6	9	B*5103	NAGLCKATI	121,00	9
2950	HPV	type 16 6	9	B*5102	NAGLCKATI	242,00	9
2951	HPV	type 16 6	9	A3	GLCKATISK	120,00	9
2952	HPV	type 16 6	9	B*5102	GAILILLSL	165,00	9
2953	HPV	type 16 6	9	B62	ILLSLLEKY	104,00	9
2954	HPV	type 16 6	9	A*0201	SLLEKYNVL	199,30	9
2955	HPV	type 16 6	9	A*0205	SLLEKYNVL	126,00	9
2956	HPV	type 16 6	9	Cw*0301	SLLEKYNVL	150,00	9
2957	HPV	type 16 6	9	A24	KYNVLSTSI	180,00	9
2958	HPV	type 16 6	9	Cw*0301	TSIPSYAGL	500,00	9
2959	HPV	type 16 6	9	A*0201	GLSYVISLV	159,97	9
2960	HPV	type 16 6	9	A68.1	TTLTCCVVR	100,00	9
2961	HPV	type 16 6	9	A68.1	CVVRLYNPR	400,00	9
2962	HPV	type 16 6	9	A68.1	VVRLYNPRR	200,00	9
2963	HPV	type 16 6	9	B*2705	GRDPGGMVLL	2000,00	9
2964	HPV	type 16 6	9	B*3701	RDPMGMVLL	200,00	9
2965	HPV	type 16 6	9	B*5102	DPGGMVLLV	220,00	9
2966	HPV	type 16 6	9	A*0201	GMGVLLVTV	115,53	9
2967	HPV	type 16 6	9	A*0201	LLVTVLGFV	194,44	9
2968	HPV	type 16 6	9	B*5102	LGFLVTINV	220,00	9
2969	HPV	type 16 6	9	B*2705	VRLEVNAGLC	200,00	10
2970	HPV	type 16 6	9	B*5102	GAILILLSLL	165,00	10
2971	HPV	type 16 6	9	A*0201	LLSLLEKYNV	118,24	10
2972	HPV	type 16 6	9	Cw*0301	LSLLEKYNVL	100,00	10
2973	HPV	type 16 6	9	B*5102	IPSYAGLSYV	242,00	10
2974	HPV	type 16 6	9	B*5102	YAGLSYVISL	110,00	10
2975	HPV	type 16 6	9	B*5102	AGLSYVISLV	145,20	10
2976	HPV	type 16 6	9	A68.1	CVVRLYNPRR	400,00	10
2977	HPV	type 16 6	9	B*2705	RRATGRDPGM	1800,00	10
2978	HPV	type 16 6	9	B*2705	GRDPGGMVLL	2000,00	10
2979	HPV	type 16 6	9	A*0201	VLLVTVLGFV	719,44	10
2980	HPV	type 16 6	9	A*0201	VLGFVLTINV	118,24	10
2981	HPV	type 16 6	10	B*5102	APASIKLV	200,00	8
2982	HPV	type 16 6	10	B*5102	GGLTGASV	145,20	8
2983	HPV	type 16 6	10	B*5102	GASVSVAV	100,00	8
2984	HPV	type 16 6	10	B*5102	GGLVPNGI	264,00	8
2985	HPV	type 16 6	10	B*5102	VPNGIYPV	220,00	8
2986	HPV	type 16 6	10	B*5102	RPPVDPDV	200,00	8
2987	HPV	type 16 6	10	B*5102	NPPKNTPI	532,40	8
2988	HPV	type 16 6	10	B*5102	VPACLHVL	100,00	8
2989	HPV	type 16 6	10	A68.1	DVGAPASIK	720,00	9
2990	HPV	type 16 6	10	B*5103	GAPASIKLV	110,00	9
2991	HPV	type 16 6	10	B*5102	GAPASIKLV	121,00	9
2992	HPV	type 16 6	10	B*2705	VRPVPDPV	600,00	9
2993	HPV	type 16 6	10	B*5102	PPVPDPVPI	120,00	9
2994	HPV	type 16 6	10	B*5102	NPPKNTPI	133,10	9
2995	HPV	type 16 6	10	B*5102	TPILPYCNI	1320,00	9
2996	HPV	type 16 6	10	B*5102	SAIVLPSTL	165,00	9
2997	HPV	type 16 6	10	B*5102	LGIMSGGHV	120,00	9
2998	HPV	type 16 6	10	B*5102	GGLTGASVSV	132,00	10
2999	HPV	type 16 6	10	A*0201	GLVPNGIYPV	159,97	10
3000	HPV	type 16 6	10	A68.1	LVPNGIYPVR	200,00	10
3001	HPV	type 16 6	10	B*5102	NGIYPVRPPV	132,00	10
3002	HPV	type 16 6	10	B*5102	RPPVPDPVPI	400,00	10
3003	HPV	type 16 6	10	B*5102	IPNPPKNTPI	440,00	10
3004	HPV	type 16 6	10	B*5102	LPYCNI CSAI	2000,00	10
3005	HPV	type 16 6	10	B*5103	LPYCNI CSAI	120,00	10
3006	HPV	type 16 6	10	B*3901	GHVPACLHVL	270,00	10
3007	HPV	type 16 6	10	Cw*0301	GHVPACLHVL	100,00	10
3008	HPV	type 16 6	11	B*2705	MQYQDLSY	500,00	8
3009	HPV	type 16 6	11	B*2705	SRHCNSFW	200,00	8
3010	HPV	type 16 6	11	B*2705	LRQKLVTL	2000,00	8
3011	HPV	type 16 6	11	B*2705	RRHCSTQC	600,00	8
3012	HPV	type 16 6	11	B*2705	IQCTMLFK	200,00	8
3013	HPV	type 16 6	11	A*0201	MLWMQYQDL	452,14	9
3014	HPV	type 16 6	11	B*2705	MLWMQYQDL	150,00	9
3015	HPV	type 16 6	11	B*2705	MQYQDLSYR	500,00	9
3016	HPV	type 16 6	11	B*5801	KSSRHCSNF	132,00	9
3017	HPV	type 16 6	11	B*2702	SRHCNSFWY	200,00	9
3018	HPV	type 16 6	11	B*2705	SRHCNSFWY	1000,00	9
3019	HPV	type 16 6	11	A24	WYFNLRQKL	316,80	9
3020	HPV	type 16 6	11	Cw*0401	WYFNLRQKL	220,00	9
3021	HPV	type 16 6	11	B8	NLRQKLVTL	160,00	9
3022	HPV	type 16 6	11	B*2705	RQKLVTLPF	300,00	9
3023	HPV	type 16 6	11	B62	RQKLVTLPF	576,00	9
3024	HPV	type 16 6	11	A*0201	KLVTLPFTI	211,79	9
3025	HPV	type 16 6	11	B*5102	LPFTTICKC	121,00	9

3026	HPV	type 16 6	11	Cw*0401	MFYIMSCPM	110,00	9
3027	HPV	type 16 6	11	B*5102	MPCRRHCSI	440,00	9
3028	HPV	type 16 6	11	B*2705	CRRHCSIQC	200,00	9
3029	HPV	type 16 6	11	B*2705	RRHCSIQCT	600,00	9
3030	HPV	type 16 6	11	B*2705	MQYQDLSYRH	100,00	10
3031	HPV	type 16 6	11	B*2705	YRHKSSRHCHN	200,00	10
3032	HPV	type 16 6	11	B*5801	KSSRHCHNSFW	240,00	10
3033	HPV	type 16 6	11	B*2702	SRHCNSFWYF	200,00	10
3034	HPV	type 16 6	11	B*2705	SRHCNSFWYF	1000,00	10
3035	HPV	type 16 6	11	B*2702	LRQKLVTLPFF	200,00	10
3036	HPV	type 16 6	11	B*2705	LRQKLVTLPFF	1000,00	10
3037	HPV	type 16 6	11	B*2705	CRRHCSIQCT	200,00	10
3038	HPV	type 16 6	11	B*2705	RRHCSIQCTM	1800,00	10
3039	HPV	type 16 6	12	B*5102	YGCSTITV	106,48	9
3040	HPV	type 16 6	13	B*2705	GQVLPNNF	100,00	8
3041	HPV	type 16 6	13	B*2705	FRRGYFVA	200,00	8
3042	HPV	type 16 6	13	B*2705	RRGYFVAA	600,00	8
3043	HPV	type 16 6	13	B*2705	GRGGVVGQV	600,00	9
3044	HPV	type 16 6	13	B*2705	GQVLPNNFR	100,00	9
3045	HPV	type 16 6	13	A68.1	QVLPNNFR	600,00	9
3046	HPV	type 16 6	13	B*2705	FRRGYFVAA	200,00	9
3047	HPV	type 16 6	13	B*2705	RRGYFVAAK	6000,00	9
3048	HPV	type 16 6	13	A68.1	FVAAKHRCR	400,00	9
3049	HPV	type 16 6	13	B*2705	GRGGVVGQVL	2000,00	10
3050	HPV	type 16 6	13	B*2705	GQVLPNNFR	100,00	10
3051	HPV	type 16 6	13	B*2705	FRRGYFVAAK	2000,00	10
3052	HPV	type 16 6	13	B*2705	RRGYFVAAKH	600,00	10
3053	HPV	type 16 6	14	B*5102	FPYFIFTI	4000,00	8
3054	HPV	type 16 6	14	B*5201	FPYFIFTIF	250,00	9
3055	HPV	type 16 6	14	A*0201	FIFTIFFCI	269,06	9
3056	HPV	type 16 6	14	Cw*0401	IFFCIIIFKL	440,00	9
3057	HPV	type 16 6	14	Cw*0401	NFPYFIFTIF	100,00	10
3058	HPV	type 16 6	14	Cw*0401	IFTIFFCIIIF	100,00	10
3059	HPV	type 16 6	14	A*0201	TIFFCIIIFKL	144,98	10
3060	HPV	type 16 6	15	B*5102	IAYVSIKL	302,50	8
3061	HPV	type 16 6	15	B*5102	CPVCIMHCI	1200,00	9
3062	HPV	type 16 6	15	A*0201	CIMHCIAV	447,61	9
3063	HPV	type 16 6	15	A24	AYVSIKLHF	210,00	9
3064	HPV	type 16 6	15	Cw*0401	AYVSIKLHF	110,00	9
3065	HPV	type 16 6	15	Cw*0401	HFHCISMFF	150,00	9
3066	HPV	type 16 6	15	B*5801	ISMFFYTSCW	120,00	10
3067	HPV	type 16 6	16	Cw*0401	MFKSHFSG	220,00	9
3068	HPV	type 16 6	17	B*5102	EGILVPMV	145,20	9
3069	HPV	type 16 6	17	A*0201	ILVPMVYA	106,84	9
3070	HPV	type 16 6	17	Cw*0301	LVPMPVYAL	100,00	9
3071	HPV	type 16 6	18	B*3901	MHFLNCHL	180,00	8
3072	HPV	type 16 6	18	B*3901	CHLCSSNRAL	180,00	10
3073	HPV	type 16 6	20	B*2705	MQPHYRL	1000,00	8
3074	HPV	type 16 6	20	B*2705	YRLLCHYR	1000,00	8
3075	HPV	type 16 6	20	B*2705	YRRPIVPS	200,00	8
3076	HPV	type 16 6	20	B*2705	RRPIVPSV	1800,00	8
3077	HPV	type 16 6	20	B*5102	RPIVPSVI	1200,00	8
3078	HPV	type 16 6	20	B*2705	MQPHYRLLC	100,00	9
3079	HPV	type 16 6	20	B*2705	YRLLCHYRR	1000,00	9
3080	HPV	type 16 6	20	B*2705	YRRPIVPSV	600,00	9
3081	HPV	type 16 6	20	B*2702	RRPIVPSVI	180,00	9
3082	HPV	type 16 6	20	B*2705	RRPIVPSVI	1800,00	9
3083	HPV	type 16 6	20	B*5201	RPIVPSVII	132,00	9
3084	HPV	type 16 6	20	B*5102	RPIVPSVII	1200,00	9
3085	HPV	type 16 6	20	B*2705	MQPHYRLCH	100,00	10
3086	HPV	type 16 6	20	B*2705	YRRPIVPSVI	600,00	10
3087	HPV	type 16 6	20	B*2702	RRPIVPSVII	180,00	10
3088	HPV	type 16 6	20	B*2705	RRPIVPSVII	1800,00	10
3089	HPV	type 16 6	21	B*5102	EALSSYTL	150,00	8
3090	HPV	type 16 6	21	Cw*0301	MLLYYAIL	100,00	9
3091	HPV	type 16 6	21	A24	LYYAILEAL	280,00	9
3092	HPV	type 16 6	21	Cw*0401	LYYAILEAL	400,00	9
3093	HPV	type 16 6	21	B60	LEALSSYTL	640,00	9
3094	HPV	type 16 6	21	A*0201	LLYYAILEAL	130,97	10
3095	HPV	type 16 6	21	B*2705	LLYYAILEAL	150,00	10
3096	HPV	type 16 6	22	Cw*0301	VIVFLYCQL	100,00	9
3097	HPV	type 16 6	22	A*0201	FLYCQLYV	12951,14	9
3098	HPV	type 16 6	22	Cw*0301	VVIVFLYCQL	100,00	10
3099	HPV	type 16 6	23	B*2705	QQYTNRNT	100,00	8
3100	HPV	type 16 6	23	B*2705	NRNTLIYY	1000,00	8
3101	HPV	type 16 6	23	B*2705	QQYTNRNTL	1000,00	9
3102	HPV	type 16 6	23	B*2702	NRNTLIYYF	200,00	9
3103	HPV	type 16 6	23	B*2705	NRNTLIYYF	1000,00	9
3104	HPV	type 16 6	23	B*2705	MQQYTNRNTL	200,00	10
3105	HPV	type 16 6	23	B*2705	QQYTNRNTLI	300,00	10
3106	HPV	type 16 6	25	B*2705	FQSHGALL	200,00	8
3107	HPV	type 16 6	25	B*2705	TRCLRFQI	600,00	8
3108	HPV	type 16 6	25	B*2705	LRFQIISF	5000,00	8
3109	HPV	type 16 6	25	B*2705	LQLYFVFL	200,00	8
3110	HPV	type 16 6	25	Cw*0401	VFQSHGALL	264,00	9
3111	HPV	type 16 6	25	B*2705	LQYCHTRCL	300,00	9
3112	HPV	type 16 6	25	B*2705	TRCLRFQII	600,00	9
3113	HPV	type 16 6	25	B62	CLRFQIISF	144,00	9
3114	HPV	type 16 6	25	B14	LRFQIISFL	300,00	9
3115	HPV	type 16 6	25	B*2702	LRFQIISFL	300,00	9

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3116	HPV	type 16 6	25	B*2705	LRFQIISFL	10000,00	9
3117	HPV	type 16 6	25	B*2705	FQIISFLQL	200,00	9
3118	HPV	type 16 6	25	Cw*0301	FQIISFLQL	100,00	9
3119	HPV	type 16 6	25	Cw*0401	SFLQLYFVF	100,00	9
3120	HPV	type 16 6	25	A*0201	FLQLYFVFL	1026,89	9
3121	HPV	type 16 6	25	B*2705	LQLYFVFLY	100,00	9
3122	HPV	type 16 6	25	B62	LQLYFVFLY	160,00	9
3123	HPV	type 16 6	25	A*0201	QLYFVFLYI	348,87	9
3124	HPV	type 16 6	25	B*5102	LPVTSAEFPL	330,00	10
3125	HPV	type 16 6	25	B*5102	FPLQYCHTRC	132,00	10
3126	HPV	type 16 6	25	B*2705	LQYCHTRCLR	500,00	10
3127	HPV	type 16 6	25	Cw*0401	QYCHTRCLR	110,00	10
3128	HPV	type 16 6	25	A24	QYCHTRCLR	100,00	10
3129	HPV	type 16 6	25	B*2705	TRCLRQFIIS	200,00	10
3130	HPV	type 16 6	25	B*2705	LRFQIISFLQ	100,00	10
3131	HPV	type 16 6	25	Cw*0401	RFQIISFLQL	200,00	10
3132	HPV	type 16 6	25	B*2705	FQIISFLQLY	100,00	10
3133	HPV	type 16 6	25	B62	FQIISFLQLY	160,00	10
3134	HPV	type 16 6	25	A*0201	IISFLQLYFV	205,66	10
3135	HPV	type 16 6	25	Cw*0301	SFLQLYFVFL	100,00	10
3136	HPV	type 16 6	25	Cw*0401	SFLQLYFVFL	200,00	10
3137	HPV	type 16 6	25	A3	FLQLYFVFLY	108,00	10
3138	HPV	type 16 6	26	B*2705	QRMCCCLCF	1000,00	8
3139	HPV	type 16 6	26	A3	MLFCFLCSK	450,00	9
3140	HPV	type 16 6	26	B*2705	MLFCFLCSK	150,00	9
3141	HPV	type 16 6	26	Cw*0401	CFLCSKQRM	100,00	9
3142	HPV	type 16 6	26	B*2705	KQRMCCCLCF	300,00	9
3143	HPV	type 16 6	26	B62	KQRMCCCLCF	288,00	9
3144	HPV	type 16 6	26	B*2705	QRMCCCLCF	200,00	9
3145	HPV	type 16 6	26	B*2705	RMCCCLCFCL	150,00	9
3146	HPV	type 16 6	26	B*2705	QRMCCCLCFCL	2000,00	10
3147	HPV	type 16 6	27	B*2705	VRFCCLSSW	1000,00	8
3148	HPV	type 16 6	27	B*2702	VRFCCLSSWT	100,00	9
3149	HPV	type 16 6	27	B*2705	VRFCCLSSWT	1000,00	9
3150	HPV	type 16 6	27	B*2702	VRFCCLSSWTI	300,00	10
3151	HPV	type 16 6	27	B*2705	VRFCCLSSWTI	3000,00	10
3152	HPV	type 16 6	27	A*0201	CLSSWTIYFI	131,97	10
3153	HPV	type 16 6	28	B*2705	HRPVHRPL	2000,00	8
3154	HPV	type 16 6	28	B*5102	RPVHRPLI	1320,00	8
3155	HPV	type 16 6	28	B*2705	HRPLILWN	200,00	8
3156	HPV	type 16 6	28	B*5102	RPLILWNL	300,00	8
3157	HPV	type 16 6	28	B*2705	ILWNLCLF	150,00	8
3158	HPV	type 16 6	28	B*2705	SRCLCFSS	200,00	8
3159	HPV	type 16 6	28	B*2702	CRCISMHDY	200,00	9
3160	HPV	type 16 6	28	B*2705	CRCISMHDY	1000,00	9
3161	HPV	type 16 6	28	B*3901	MHDYSWVSL	270,00	9
3162	HPV	type 16 6	28	B14	HRPVHRPLI	120,00	9
3163	HPV	type 16 6	28	B*2705	HRPVHRPLI	600,00	9
3164	HPV	type 16 6	28	B*5102	RPVHRPLIL	330,00	9
3165	HPV	type 16 6	28	B14	HRPLILWNL	120,00	9
3166	HPV	type 16 6	28	B*2705	HRPLILWNL	2000,00	9
3167	HPV	type 16 6	28	A*0201	LILWNLCLF	233,72	9
3168	HPV	type 16 6	28	Cw*0401	CFLSRCLCF	110,00	9
3169	HPV	type 16 6	28	Cw*0401	CFSSGHSGF	100,00	9
3170	HPV	type 16 6	28	B*2705	CRCISMHDYS	200,00	10
3171	HPV	type 16 6	28	A*0201	SMHDYSWVSL	107,54	10
3172	HPV	type 16 6	28	Cw*0401	DYSWVSLRVL	400,00	10
3173	HPV	type 16 6	28	A24	DYSWVSLRVL	200,00	10
3174	HPV	type 16 6	28	B*2705	QODIHRPVHR	100,00	10
3175	HPV	type 16 6	28	B14	HRPVHRPLIL	400,00	10
3176	HPV	type 16 6	28	B*2705	HRPVHRPLIL	2000,00	10
3177	HPV	type 16 6	28	B*2705	HRPLILWNL	200,00	10
3178	HPV	type 16 6	28	A3	ILWNLCLFLSR	120,00	10
3179	HPV	type 16 6	28	B*2705	SRCLCFSSGH	200,00	10
3180	HPV	type 16 6	29	B*2705	SRKAKSYT	200,00	8
3181	HPV	type 16 6	29	B*2705	SRRSNCCL	2000,00	8
3182	HPV	type 16 6	29	B*2705	LQYTHSNI	300,00	8
3183	HPV	type 16 6	29	B*2705	SRKAKSYTS	200,00	9
3184	HPV	type 16 6	29	B*2702	RRSNCCLQY	600,00	9
3185	HPV	type 16 6	29	B*2705	RRSNCCLQY	3000,00	9
3186	HPV	type 16 6	29	B*2705	LQYTHSNII	300,00	9
3187	HPV	type 16 6	29	B*5201	LQYTHSNII	825,00	9
3188	HPV	type 16 6	29	B*2705	SRKAKSYTSR	1000,00	10
3189	HPV	type 16 6	29	B*2702	RRRSNCCLQY	200,00	10
3190	HPV	type 16 6	29	B*2705	RRRSNCCLQY	1000,00	10
3191	HPV	type 16 6	29	B*2705	RRSNCCLQYT	600,00	10
3192	HPV	type 16 6	29	B*2705	LQYTHSNIIS	100,00	10

table 7

## 4. Influenza

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Vaccination of mice with ncORF derived peptides from influenza A virus in combination with KLK / o-d(IC)<sub>13</sub>. Specific T-cell response is measured 7 days after vaccination, and animals are subsequently challenged with a lethal dose of mouse adapted influenza A virus (x31). Survival is monitored for 15 days.

### **Materials**

**Mice** C57Bl/6 (Harlan-Winkelmann, Germany)

**Peptides** **p82** (GLCTLVAML)

Control peptide derived from EBV; HLA-A\*0201; AA start 280

**p1574** (IASNENMETM)

Control peptide derived from Influenza nucleoprotein, AA start 365

**p1569** (TMLYNKMEF)

Flu ncORF derived peptide from segment 1, frame 1, ORF 1, AA start 569

**p1600** (SSIAAQDAL)

Flu ncORF derived peptide from segment 3, frame 6, ORF 2, AA start 83

**P1664** (VTILNLALL)

Flu ncORF derived peptide from segment 4, frame 5, ORF 6, AA start 9

Dose: 100µg/peptide/mouse

**o-d(IC)<sub>13</sub>** ODN 5'ICI CIC ICI CIC ICI CIC ICI CIC  
**(=ODN1a)** IC3'

was synthesized by Purimex Nucleic Acids Technology,  
Göttingen

Dose: 5nmol/mouse

**KLK**

KLKLLLLLLKLK-COOH

was synthesized by MPS (Multiple Peptide System, USA)

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Dose: 127nmol/mouse

**Formulation** 270mM Sorbit/10mM Hepes**Influenza A virus** x31, mouse adapted influenza A virus,  
rec. virus derived from A/Pr/8/34 (seg 1, 2, 3, 5,  
7, 8) and A/Aichi/2/68 (seg 4, 6)**Experimental setup** (15 mice/group)

1. p1574 + KLK + o-d(IC)<sub>13</sub>
2. p1569 + KLK + o-d(IC)<sub>13</sub>
3. p1600 + KLK + o-d(IC)<sub>13</sub>
4. p1664 + KLK + o-d(IC)<sub>13</sub>
5. p1600+p1569 + KLK + o-d(IC)<sub>13</sub>

On day 0 mice were injected s.c. into both hind footpads with a total amount of 100µl vaccine/mouse (50µl/foot) containing the above listed compounds. On day 7, unseparated splenocytes from 5 mice were stimulated in 96-well ELIspot plates in order to enumerate the number of peptide-specific IFN-γ producing cells for each experimental group.

Remaining 10 mice were challenged with mouse adapted x31 influenza A virus (5\* 10E5 pfu). Survival was monitored for 15 days.

**Results ELIspot (Fig. 5a)**

Spleen cells of groups 1 and 3 (peptides p1574 and p1600) do not show any specific spots after restimulation with the respective peptides. Groups 2 and 4 (p1569 and p1664) specifically release IFN-γ after restimulation. Group 5 was vaccinated with two individual peptides (not as a mix, p1600 and p1569). Upon restimulation with either the mix of both peptides or p1569, specific cytokine release is detected. In contrast, upon restimulation with p1600 alone, no IFN-γ spots are detectable. This is consistent with group 3 (p1600 alone).

**Results challenge (Fig. 5b)**

Fig. 5b shows the survival rate of challenged mice with a lethal dose of mice adapted influenza A virus x31. Group 1 (p1574, reported protective epitope for H2-Db) protects 30% of all chal-

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lenged mice. Peptide p1569 does not at all provide protection (0%). In contrast, peptides p1600 and p1664 do protect 50% and 62% of challenged animals, respectively. When animals are vaccinated with two different peptides (group 5, peptides p1600 and 1569) up to 70% of animals are protected.

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## Claims:

1.: Polypeptide encoded by an alternative reading frame of a pathogenic virus, characterized in that said polypeptide

- starts with a methionine amino acid residue,
- comprises an antigenic determinant and
- comprises more than 7 amino acid residues

and fragments of said polypeptide comprising more than 7 amino acids.

2. Polypeptide or fragments according to claim 1 characterized in that said pathogenic virus is selected from the group consisting of Hepatitis A virus (HAV), Hepatitis B virus (HBV), Hepatitis C virus (HCV), Hepatitis D virus (HDV), Hepatitis E virus (HEV), Hepatitis F virus (HFV) Hepatitis G virus (HGV) Human Immunodeficiency virus (HIV), Influenza virus, Foot and Mouth Disease virus (FMDV), Ebola virus, HTLV I, HTLV II, SIV, Parvovirus, Papilloma virus, Rotavirus, Adenovirus, Cytomegalovirus, Feline Immunodeficiency virus (FIV), Epstein-Barr virus (EBV), Herpes simplex virus (HSV), Herpes zoster virus (HZV), Measles virus and oncogenic viruses.

3. Polypeptide or fragments according to claim 1 or 2, characterized in that it comprises at least one cytotoxic T lymphocyte (CTL-) epitope.

4. Polypeptide or fragments according to any one of claims 1 to 3, characterized in that it comprises a cytotoxic T lymphocyte (CTL-) epitope for a HLA allele selected from the group consisting of A0201, A1, A24, A3, A31, B3501, B4403, B7, B8, especially A0201, or mixtures thereof.

5. Polypeptide or fragments according to any one of claims 1 to 4, characterized in that it comprises at least one T helper cell epitope.

6. Polypeptide or fragments according to any one of claims 1 to 5, characterized in that it comprises a T helper cell epitope for a HLA allele selected from the group consisting of DP, DQ, DR or mixtures thereof

7. Polypeptide, selected from the group listed in table 2a)-n) (Seq.ID No.1-822) or a fragment of said polypeptide comprising more than 7 amino acids.
8. Polypeptide comprising or consisting of a fragment selected from the group listed in table 4a)-n), preferable fragments with a score of 50 or more, more preferred with a score of more than 200, especially fragments with a score of more than 500.
9. Polypeptide, selected from the group listed in table 6 and comprising 7 or more than 7 amino acid residues (Seq.ID No.823-874) or a fragment of said polypeptide comprising more than 7 amino acid residues.
10. Polypeptide or fragments according to any one of claims 1 to 9, characterized in that it is conjugated to a carrier, especially to an immunomodulating substance.
11. Polypeptide or fragments according to any one of claims 1 to 10, characterized in that it is conjugated to an immunomodulating substance selected from the group comprising polycationic substances, especially polycationic polypeptides, and immunomodulating nucleic acids, especially deoxyinosine- and/or deoxyuridine containing oligodeoxynucleotides.
12. Polypeptide or fragments according to any one of claims 1 to 11, characterized in that it comprises at least one T cell epitope.
13. Polypeptide or fragments according to any one of claims 1 to 12, characterized in that it is encoded by an alternative reading frame which reads on the complementary strand as the functional reading frame of said pathogenic virus.
14. Polypeptide or fragments according to any one of claims 1 to 13, characterized in that it comprises at least one peptide selected from the group of peptides listed in table 4a, 4c, 4e, 4g, 4i, 4k and 4m having a score of 50 or more, more preferred with a score of more than 200, especially with a score of more

than 500.

15. Polypeptide or fragments according to any one of claims 1 to 14, characterized in that it is used as a therapeutic agent.

16. Polypeptide or fragments according to any one of claims 1 to 15, characterized in that it comprises a tail consisting of two to seven amino acids, said amino acids being selected from F, I, L, A, Y, W or C, at at least one of its N- or C- terminus.

17. Polypeptide or fragments according to any one of claims 1 to 15, characterized in that it comprises a tail consisting of two to seven amino acids, said amino acids being selected from E or D, at at least one of its N- or C- terminus.

18. Polypeptide or fragments according to any one of claims 1 to 17, characterized in that it comprises a peptide selected from the group of peptides listed in table 7 having a score of 50 or more, more preferred with a score of more than 200, especially with a score of more than 500.

19. Pharmaceutical composition comprising one or more polypeptides or fragments according to any one of claims 1 to 18.

20. Pharmaceutical composition according to claim 19, characterized in that it further comprises an immunomodulating substance, preferably selected from the group comprising polycationic substances, especially polycationic polypeptides, and immunomodulating nucleic acids, especially deoxyinosine- and/or deoxyuridine containing oligodeoxynucleotides.

21. Pharmaceutical composition according to claim 19 or 20, characterized in that it further comprises structural or functional polypeptides of a pathogenic virus or fragments thereof, especially structural or functional polypeptides or fragments thereof comprising an antigenic determinant.

22. Pharmaceutical composition according to any one of claims 19 to 21, characterized in that it contains per administerable dose 1 ng to 1 g, preferably 100 ng to 10 mg, especially 10 µg to

1 mg, of one or more polypeptides or fragments according to any one of claims 1 to 18.

23. Pharmaceutical composition according to any one of claims 19 to 22, characterized in that it is formulated as a vaccine.

24. Pharmaceutical composition according to any one of claims 19 to 23, characterized in that it comprises further active ingredients, especially immunopotentiating cytokines, anti-inflammatory substances, antimicrobial substances or combinations thereof.

25. Pharmaceutical composition according to any one of claims 19 to 24, characterized in that it further comprises a polycationic polymer selected from the group consisting of a polycationic peptide, especially polyarginine, polylysine or an antimicrobial peptide, especially a cathelicidin-derived antimicrobial peptide, or a growth hormone, especially a human growth hormone.

26. Pharmaceutical composition according to any one of claims 19 to 25, characterized in that it further comprises auxiliary substances, especially a pharmaceutically acceptable carrier, buffer substances, stabilizers or combinations thereof.

27. Use of a polypeptide or fragments according to any one of claims 1 to 18 for the manufacture of a medicament for treating or preventing an infection with said pathogenic virus.

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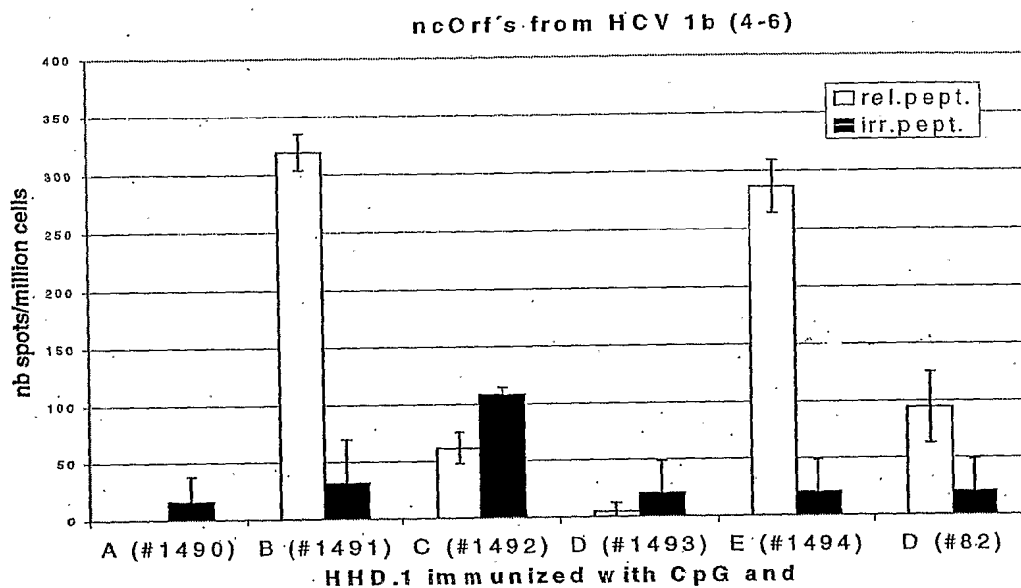


Fig.1

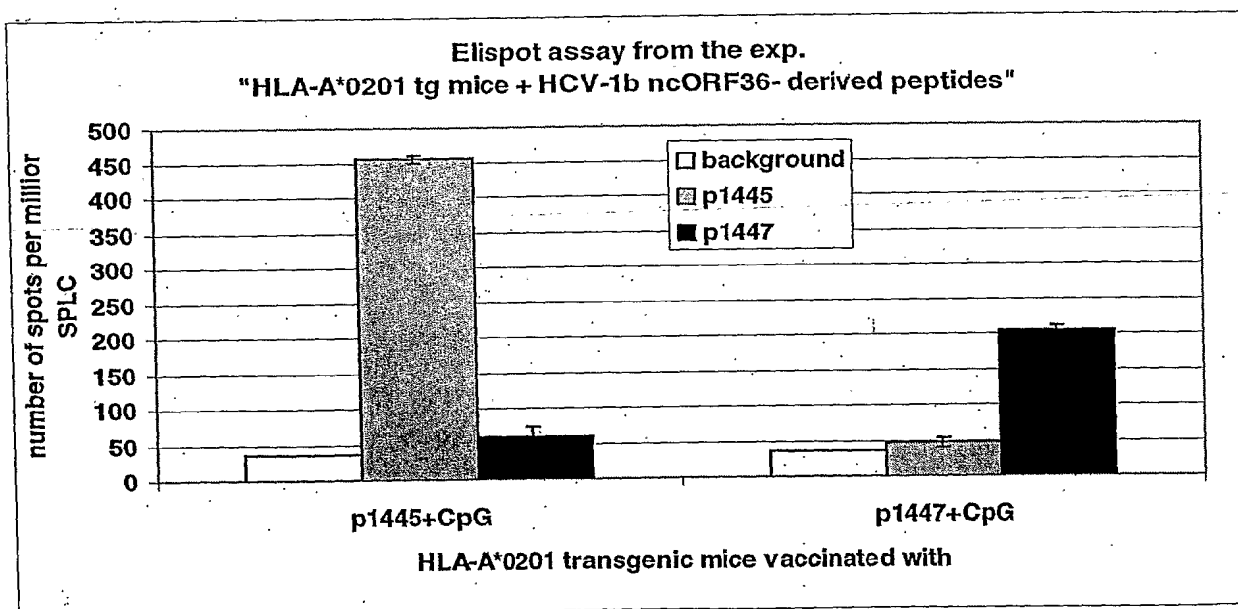


Fig.2

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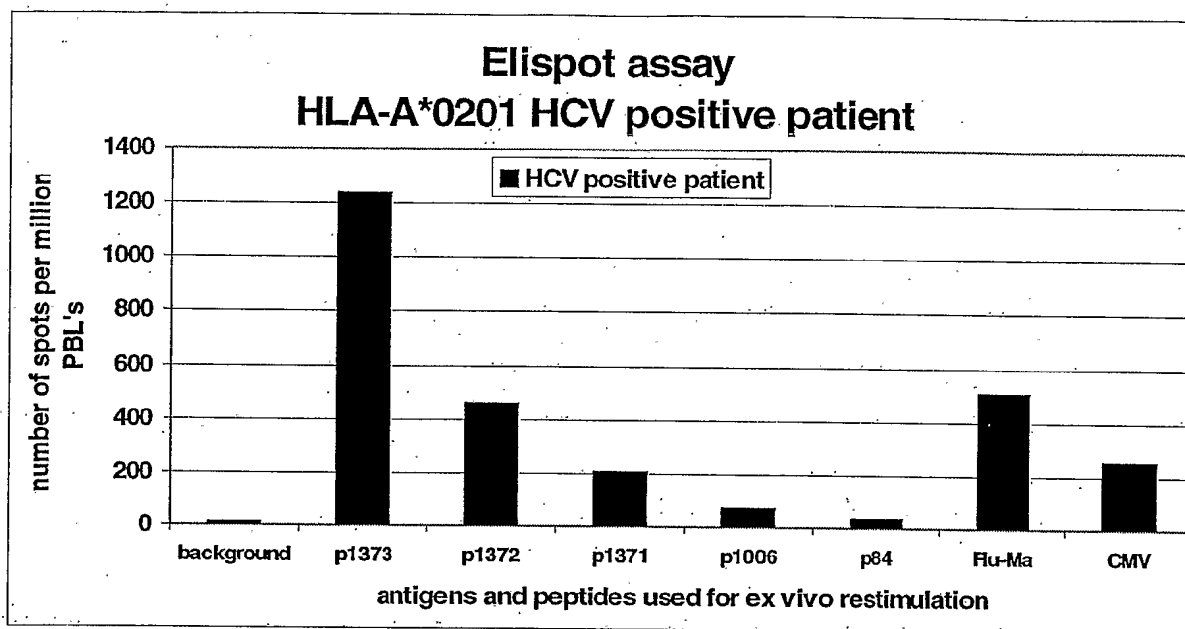


Fig.3

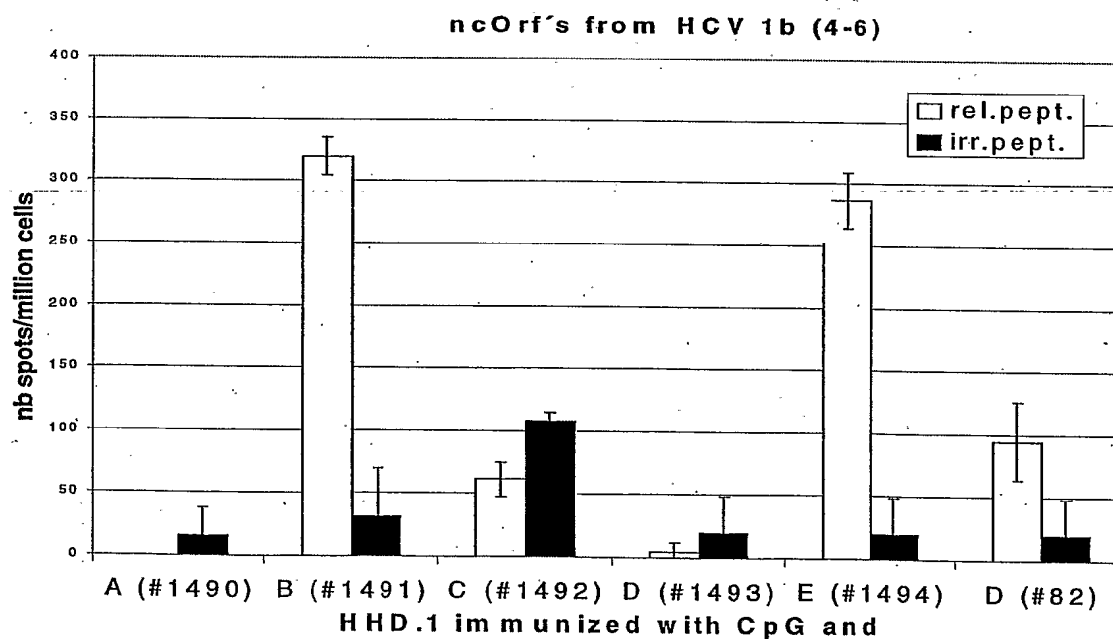
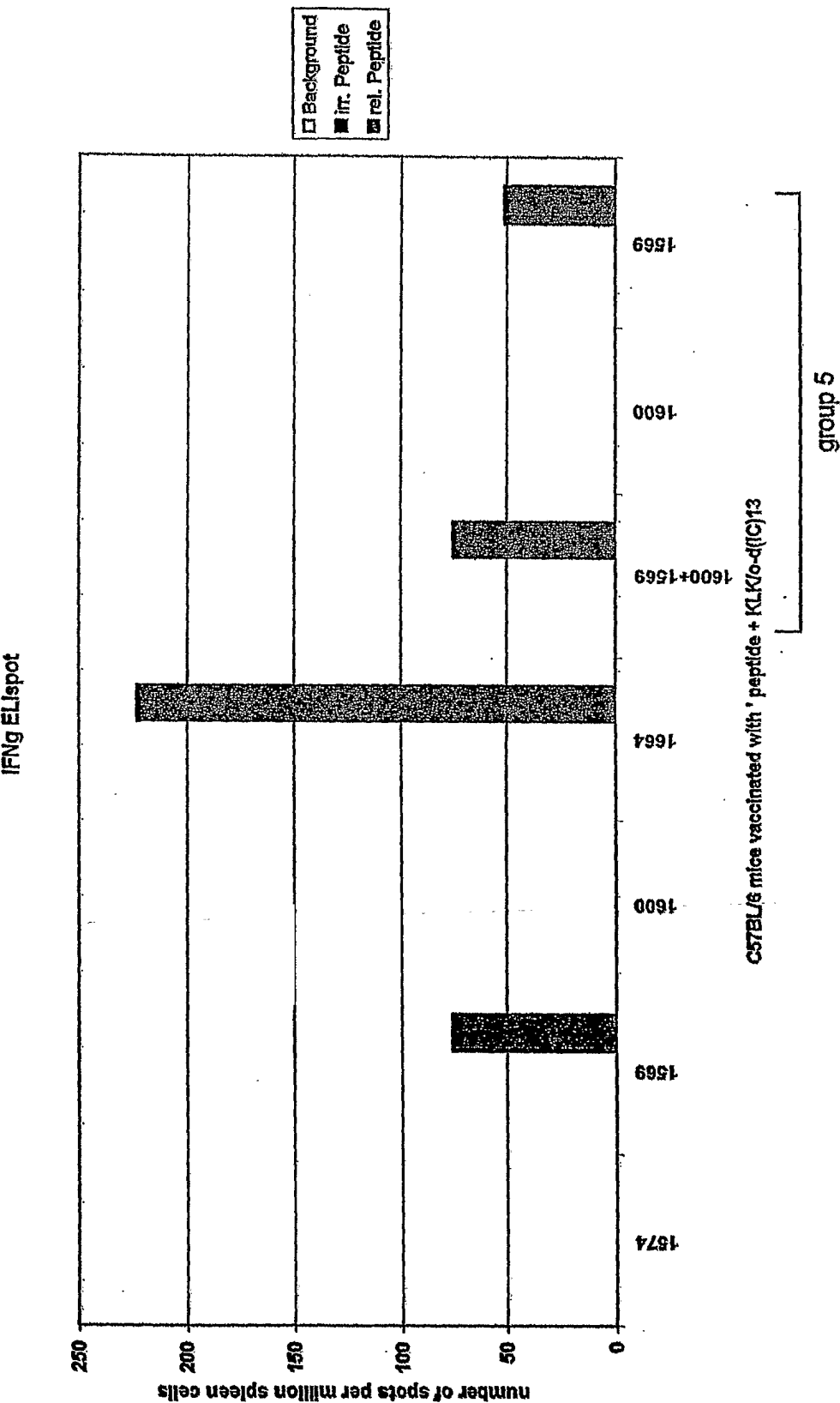


Fig.4

**Fig. 5a:** Vaccination of mice with ncORF derived peptides from influenza A virus in combination with KLK/o-d(IC)<sub>13</sub>  
IFN- $\gamma$  ELIsot



**Fig. 5b:** Vaccination of mice with ncORE derived peptides from influenza A virus in combination with KLK/o-d(IC)<sub>13</sub>

Challenge

